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# AMERICAN FRUIT GROWER

WHOLESALE  
FRUIT & PRODUCE

*Edited by Samuel Adams*

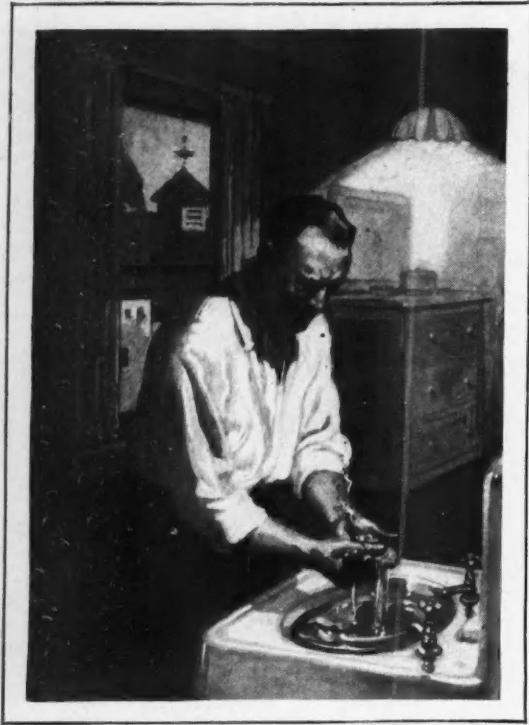
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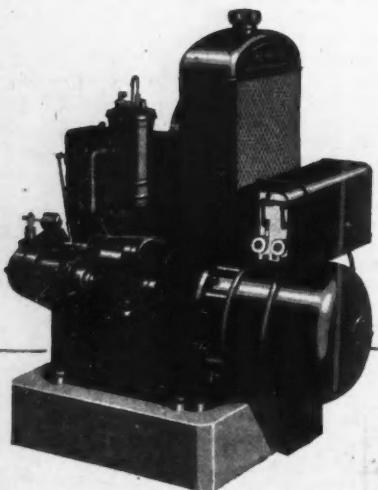
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SEPTEMBER, 1921

No. 9

## Operating a Five-Hundred Acre Orchard

By Ray Yarnell, Kansas

THE biggest apple orchard in Kansas, about 500 acres, with an average annual production of 100,000 bushels and a peak production of 210,000 bushels in one year, is located near Hutchinson, Reno County, Kansas, in the Arkansas River valley. It is known as the Yaggy Plantation and is owned by E. E. Yaggy, an expert farmer and orchardist and one of the keenest business men in the country.

The Yaggy plantation consists of 1,500 acres and nearly two-thirds of it is devoted to the growing of trees. In addition to the orchard there are 440 acres of catalpa trees. On the remainder of the land is grown wheat, corn, oats and some alfalfa and forage.

It is the production of apples in enormous quantities, their handling, storage and sale that interests Mr. Yaggy and that serve to make the plantation unique in Kansas and the mid-west. Here apple growing has become an industry. During a peak crop year at harvest time the plantation employs up to 300 men, and the year around average is 38 men. The number, of course, varies with the season but there is always a good sized force on the place to handle the work.

The management of men is just as important as the management of trees, Mr. Yaggy declares, and he has put his conviction into operation on his fruit ranch. Near the big ranch house there is really a little town, consisting of 17 frame buildings which house the permanent workmen and those who are employed by seasons to handle the fruit crop.

The buildings consist of an 8-room house for the foreman; three modern two-story eight to 10 room houses; three one-story cottages of four rooms each; two bunk houses, a recreation hall and a dining hall. The buildings are insured for \$60,000 but this does not nearly represent their cost. All the buildings are electric lighted. Some of the cooking is done by electricity. Most of the buildings have running water and some of them modern plumbing. The recreation hall will accommodate about 200 men. It is a large hall, kept clean and well heated and amply provided with chairs and tables. It is so arranged that motion picture shows may be given.

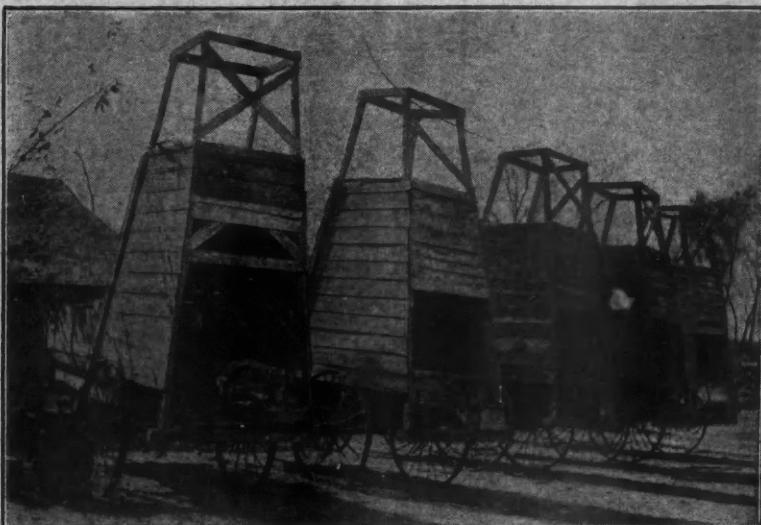
There are facilities on the plantation for boarding and "sleeping" 325 men. That capacity was tested in 1915. Seventy-five men can be boarded in the various houses and the big dining hall and kitchen are not

used except during applepicking time, September, October and November. The dining hall capacity is such that 325 men can be seated at first table. The houses are supplied to employees as a part of their salary. The same is true of board.

"Since the start of this enterprise in 1888," said Mr. Yaggy, "we have found that good board means contented men. The only way we can be sure of good board is to provide it

of apples. That takes a large force of men. In handling men we feel that our success has depended largely on the following factors:

1. Good board.
2. Always paying every man every cent to which he is entitled. Any dispute is decided in the man's favor.
3. Always re-employing appli-



Part of the Battery of Sprayers on the Yaggy Plantation.

ourselves. We have had some of the largest boarding contractors in the United States here, but with one exception, the arrangement was unsatisfactory. We do our own boarding, and in September and October, 1915, we served more than 50,000 man-meals without a complaint.

"Since 1900 we have never suffered any loss from lack of labor in spite of the fact that apples are highly perishable. On many days we have had to pick, haul, sort and pack 5,000 bushels

cants who have previously been in our employ, unless they are undesirable. Any man who has worked for us, even for a short time, has some knowledge of our ways of doing things and thus has a value to us greater than an absolutely raw man. We have applications constantly from men who have at some time been employees here.

"4. The employment of good foremen, men with horse-sense, some sense of proportion, tact, control of temper and who can still get fair results. We

have had somewhere between two and three thousand individuals working for us since 1900 and we have never had a labor shortage and never expect to have one."

Power used on the Yaggy plantation consists chiefly of mules. Mr. Yaggy raises a large amount of forage every year and he says he has found it more economical under his conditions to use mules than tractors and motor trucks. He has several motor cars, however, which are in almost constant use. With a railroad loading point right at his door the problem of hauling the apple crop is simple and is handled very easily with mule power at a cost that is considered satisfactory.

That Mr. Yaggy is a good manager of men is attested by the fact that his foreman, Harry Schultz, has been with him for 20 years. He has other men who have worked on the place 10 years and refuse to quit.

### The Irrigation Scheme

An almost inexhaustible supply of water is within from six to eight feet of the surface of the ground on the Yaggy plantation. It can be raised by centrifugal pumps at a small expense and an orchard can be irrigated during dry seasons at small cost. Because an apple tree lacks a long tap root that will penetrate to the water supply it is necessary during dry years to employ surface irrigation to keep the trees in a thrifty condition and to obtain a good crop.

At the time the Yaggy orchard was set out, more than 20 years ago, it was thought that irrigation would not be necessary and as a result the land on which the old orchard stands was not prepared for irrigation. Its grade varies. Sometimes the slope runs south, sometimes north or east or west. This situation has made it impossible for Mr. Yaggy to install a complete irrigation system. But he has managed to bring more than 140 acres of the orchard under irrigation. No large ditches are laid out. In irrigating a lister is run down between the rows of trees and a furrow turned about eight feet from the trunks. Water is pumped into this ditch from a centrifugal pump which draws water from two wells. One of the wells is open and the other is fitted with an 8-inch casing. On the Yaggy plantation there are four large pumps which are moved about as desired during the irrigation season.

More land has been prepared for planting to apple trees and the land leveled (Cont. on p. 14)



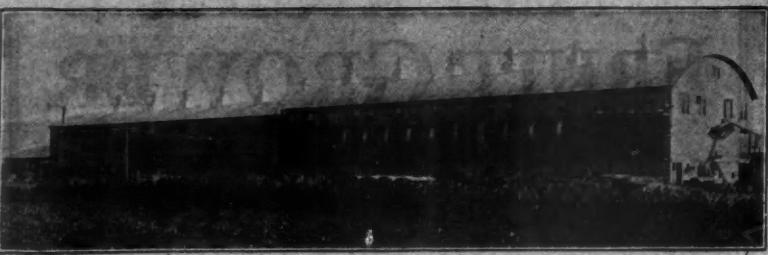
The "Fruit Depot," as it is called, Not Only Provides for Packing and Loading on Cars, But Provides Storage Space for the Packages.

# Improved Packing Houses for the Northwest

**T**HE construction of well-planned and well-equipped packing houses is essential to the economical handling of boxed apples in the Northwest. The recent building program has not kept pace with the demand of the industry, and severe losses have been sustained on account of limited facilities for packing and for storing unpacked fruit temporarily. The situation has been aggravated by the enormous increase in production during the past few years, as well as by the serious shortage of transportation equipment."

Specialists of the Bureau of Markets and Crop Estimates, United States Department of Agriculture, thus sum up the results of their study of methods and practices which have given the greatest satisfaction in commercial operations. Full details of the work are contained in Farmers' Bulletin 1204, Northwestern Apple Packing Houses, recently issued by the department.

Apple packing houses may be classified in two groups, individual packing houses, which are more commonly known as ranch packing houses, and community houses, operated either by cooperative associations or by individuals. The percentage of the crop packed in community houses is increasing steadily, and though no definite figures are available, careful estimates show that the amount in-



The \$120,000 Packing Plant of the Spokane Valley Growers' Union.

creased from about one-fourth of the total crop in 1916 to approximately one-half of the crop in 1919.

The same basic principles of construction and equipment apply to all types of houses, and the equipment and methods of operation in the larger community houses are suitable to a large extent for use in the ranch houses. The fruit should be passed through the various operations in an orderly way, moving in one direction from the receiving point to the storage or car.

#### Community Houses

Community packing houses are especially desirable in the apple-growing districts of the Northwest, where the acreage is usually concentrated in the river valleys, and where individual holdings with few exceptions are

small, ranging from 5 to 15 acres. A group of growers by joining forces may easily finance the erection of a modern packing establishment. In a community house it is possible to perfect an organization of trained men to bring the grading and packing operations to a uniform high standard. The operations are generally on a scale large enough to warrant the employment of competent workmen to supervise the various operations, and the cost of inspection is greatly reduced by having this work done at a central point. The cost of packing in a community house is not always lower than where the work is done by the individual, but it usually can be done more rapidly.

One important factor in favor of central houses is better conditions for

the employment of labor. Very few of the smaller ranches have adequate housing and subsistence facilities for the care of their additional help during the packing season. Some growers have tried hauling the packers back and forth from town each day, but this practice is not satisfactory because much time is lost on the road. Then, too, help is usually at such a premium that if one person is tardy in reporting, the grower will detain the rest of the crew awaiting his arrival. As the work is generally paid by the piece, the workers are inclined to seek employment where they can put in full time and have comfortable living quarters.

#### The Ranch Packing House

The best site for a ranch packing house usually is found near the residence and other farm buildings, close to the main traveled road. Such a location is particularly desirable where there is a common storage house in connection with the packing house, as the storage house is usually air cooled and requires the attention of some one to operate the ventilators during the storage season. If the house is a great distance from the ranch house it is less likely to be cared for properly.

Wood, brick, concrete, or tile are used in the construction of packing

(Continued on page 13)

## Making Boxed Apples Safe for Delivery

By W. E. Strong, Washington

**T**HE importance of better made apple boxes is of particular interest to dealers and shippers of the Pacific Northwest this season. If plans of the Northwest Committee on water transportation work out as predicted at this time, a total of \$20,000,000 worth of boxed apples will move from the Pacific Northwest to eastern and Gulf markets in the inter-coastal steamships equipped with refrigerator space.

Preliminary but reliable estimates indicate that there will be an excess of 30,000 carloads of apples produced in the country tributary to Seattle and Portland ports, and if rates tentatively promised by the steamship companies are put into effect together with adequate cooling space as carriers have promised in return for pledges of 4,000 carloads of fruit to be shipped, it is reasonable to expect that a much larger number of cars will move to these ports for shipment by water. In co-operation with growers and dealers the box department of the West Coast Lumbermen's Association has prepared a very complete Nailing Guide covering the fundamentals in preparing shipments for safe delivery. This consists of an eight page letter enclosure, featuring half-tones of a properly nailed box and also one of a box properly nailed and strapped for water borne shipping.

It has been very clearly demonstrated at the Laboratory of the United States Forest Service at Madison, Wisconsin, that the average wooden box is made from sufficiently heavy lumber, but failure and damage losses are largely due to insufficient care in proper preparation of packages.

The data shown in the Nailing Guide by the Association is based on tests made at the Forest Products Laboratory at Madison. It is very interesting to note that with one extra nail added to each nailing edge the strength of the box is increased more than 50 per cent.

It was further demonstrated at the Laboratory that 6 six-penny cement coated nails in each side nailing edge will give decidedly better results than the nailing method represented in the Guide issued by the Association, which specifies 5 six-penny nails in each side nailing edge.

On a recent shipment of 80,000 boxes of apples from the Pacific Northwest through the Canal to England the American Agricultural Trade Commission of London reported there would have been no breakage whatsoever had there been a few more nails used in the nailing of the shocks.

Last season over 2,000,000 boxes of

apples were strapped and shipped from the Pacific Northwest. Reports received from foreign ports showed that all properly strapped boxes were received in excellent condition.

Losses common to transportation of farm products by both water and rail have been increasing each year. Recent investigation of hundreds of

damage claims against the railroads convince marketing officials that these losses could be eliminated and the railroads saved continual annoyance and expense in settling claims if more care were used in the packing, nailing and strapping.

Loss and damage claims reported by the Consolidated Freight Classification estimated for 1919, due to improper nailing and lack of strapping, was over \$100,000,000.

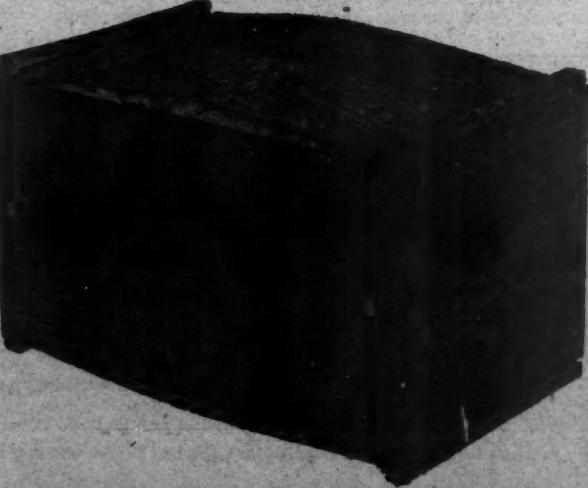
It has been demonstrated that the slight expense for two  $\frac{1}{4}$ -inch flat straps, applied just inside the cleats, drawn tight and sealed is warranted, in view of the increased strength of the box. The application of straps permit rough handling, prevent pilfering and prevents loss and damage to the contents.

The Pacific Northwest grower and dealer in apples does not find the objection to the use of the corrugated metal fasteners as has been the case in previous years. Since manufacturers have installed proper machinery for this work, the work is done as much more efficiently than is possible to do it by hand there is no serious objection to the use of the metal fasteners. A recent order of 50,000 apple boxes placed in the Pacific Northwest specified that ends could be 75 per cent two-piece stock if properly fastened with corrugated metal fasteners.

The president of the Hood River Growers' Association recently reported that they have received 15¢ additional per box for apples on the New York auction market, due to the fact that they use nothing but heavy apple boxes properly nailed. Good boxes and undamaged fruit will always bring better prices, which justifies the slight care and expense in starting shipments right.

Hood River district of Oregon this year will have about 2,000,000 boxes of apples. Walla Walla shippers and the Yakima district of Washington will use about 12,000,000 boxes. The Wenatchee Valley around 12,000,000. The Inland Empire shippers will handle about 5,000,000, which is less than normal for that section. The Underwood-White Salmon district and the rest of Washington are figured as requiring about 1,000,000 boxes this year.

This shows the right way to nail an apple box. Note the two piece ends fastened together with corrugated metal fasteners.



All apple boxes for export shipment should be strengthened by a flat iron strap as is shown in this illustration. This is a great help in protecting the box against being broken open.

# Points to Consider in Exporting Fruit

*By Frank George, U. S. Department of Agriculture*

THE first shipment of American apples to England was made 80 years ago. This was a gift package of Albemarle Pippins sent to Queen Victoria by a Virginia apple grower. The Royal Lady was so well pleased with the fruit that yearly shipments were thereafter made to the Court of England during the Queen's lifetime, and throughout the Kingdom a rapidly increasing demand for American apples developed. Fruit auctions were organized at London, Liverpool, and Glasgow, and later at Hamburg. Buyers from all parts of the United Kingdom and northern Europe attended the sales and the fruit auctions soon became the chief factor in the sale and distribution of American apples in Europe.

In England and Europe today there is just as ardent a desire for high quality American fruit as there was in the days of Queen Victoria. Of apples alone some 1,000,000 barrels are shipped to England every year. But the mutual satisfaction that attended America's early shipments no longer exists. The shippers, the transportation agencies, the consignees—all are dissatisfied with the export apple deal. The shippers assert that although they ship some of their finest fruit abroad the monetary returns are not commensurate with the effort expended. The transportation officials complain of excessive damage claims. The consignees maintain that the fruit does not command higher prices because it arrives in bad condition. Experienced fruit exporters say that the unsatisfactory returns are the result of contributory negligence upon the part of all concerned—that the shippers do not employ proper methods of harvesting and packing fruit for over-seas shipment, that the transportation agencies have much to learn in loading, handling, and stowing fruit on the vessels; that the consignees are not sufficiently concerned with the interests of the grower.

The factors that control the satisfactory marketing of fruit abroad are legion. Misunderstanding or mismanagement of any one of them may easily turn a potential profit into a heavy loss. Up-to-the-minute information of foreign trade demands and of the foreign exchange situation, reliable trade connections, efficient sales supervision, proper credit arrangements, a working knowledge of domestic and foreign rail and ocean transportation, knowledge of the hazards of shipping perishable products long distances and of the precautions that must be taken to overcome them, and an understanding of the methods of selling fruit on the other side in the conduct of the auction rooms, are the merest elementary requirements. If the shipper does not understand them he must have as a representative some one who does. Indeed, the multiplicity of the factors that control the successful marketing of fruit abroad is such that even highly organized cooperative marketing associations and the most expert fruit exporters sometimes have red ink figures on their ledger accounts.

## Unforeseen Developments

Last fall every indication pointed to a successful export apple season. True, the season was successful for a time. But there then developed a condition which no one had foreseen. Attracted by the high prices prevailing in England and the favorable rates of exchange, Italy, Switzerland, the Tyrol in Austria, Spain, France and Belgium made heavy shipments of apples to England and practically every market in the United Kingdom became glutted.

In the export apple deal glutted markets is one of the greatest elements of loss. Through the magnetism of high prices generally secured in the early part of the season, American growers, speculators and shippers are inclined sometimes to rush unduly large quantities of apples to the United Kingdom, thus oversupplying

the market and depressing prices below the level in American markets. A second serious element of loss arises from the fact that the barrelled apple shippers have much to learn in proper harvesting, packing, handling and shipping fruit for export. Sometimes whole shipments are condemned by the English sanitary authorities as unfit for human consumption. And during the past three seasons, even when apples did command the maximum price fixed by the British Government, very often the returns were far from satisfactory. For since the war the value of exchange sterling

porter should be given complete control over the entire transaction. The American grower knows nothing of credit arrangements, transportation, sales supervision, and marketing on the other side, and these matters should be left to the exporter. The grower need concern himself only with the actual harvesting, grading, and packing of the crop for shipment, and regarding which the exporter will gladly give him detailed instructions. The shipper who does not carefully follow these instructions has little chance of success. It is simply a matter of common sense that greater care

than five or six to an association. The associations simply provide facilities for selling, and in connection with the associations of buyers, establish the rules and regulations governing the selection of samples, sales and adjustments. The sales are not made by the association but by the individual members representing foreign shippers or local receivers.

The majority of these brokers are old reliable firms. Most of them endeavor to render an honest stewardship to their principals. But in every case the rules and regulations are not entirely fair to the foreign shipper. The shipper is not in touch with the arrangements, whereas the strongly organized buyers are, and the rules and regulations are generally agreed upon by the association of brokers and the association of buyers. Most of the conditions imposed are in favor of the buyers. There is a tendency to show preference to the buyer's interest rather than to do the very best for the owner of the fruit, who may be several thousand miles away.

When consignments are landed the buyers learn from the steamship manifests by whom the shipments were made and the varieties and grades represented. The buyers' inspectors are on the docks and report to their principals the condition of the arrivals, while the brokers either inspect in person or through an employee. It is the rule to show as samples in the auction rooms barrels selected from the dock which have not been inspected previously. Usually, when selling the fruit in lots of 10 barrels, two sample packages are shown in the sales room. There is also a rule regulating the separation of tight barrels from those which may be slack, although the latter may greatly influence the selling price of the entire lot from which the samples were selected.

## Condition of Market

The usual method of the typical British receiver or broker, is to sell the fruit immediately upon arrival to the highest bidder. There is no special supervision or control of the sales in the special interest of the shipper, because possibly some other market would pay a higher price, or possibly because of lighter receipts during the following period, the market would advance. But as a rule these factors are not taken into consideration. It matters not in one market what better advantages may be offered in another, and the transhipment of apples by brokers to secure greater profit for their principals was unheard of up to a few years ago.

These general practices have proved entirely satisfactory to the British. The procedure has become institutional. It is the British method of handling apple shipments. True, the system may some day be changed to accord the shippers a larger measure of protection, but meantime it remains for the American shipper to protect himself. This can be done only by employing a responsible American exporter to handle the entire transaction from start to finish. A number of exporters have representatives located in the foreign markets—representatives who have no other interest than to safeguard the interest of the grower. These agents are usually authorized to place "stop prices" on the brokers; that is, a minimum price which the brokers are instructed to hold for. This price is determined on the basis of the British market as a whole and not upon the basis of the local market. Sometimes the "stop price" stimulates bidding to the point where the minimum price can be secured, but frequently fruit is taken out from under the hammer and warehoused for a short time, or transshipped to other and better markets. Under present conditions this system of control and distribution is regarded by experienced apple exporters as the very best that can be employed.

## Would You Export Your Fruit?

If so, take heed. The process of marketing American fruits abroad is exceedingly complex, and only those succeed who know the ways in which fruit is handled in foreign countries and who will adhere closely to the prevailing customs in export trade. Under no circumstances should an American grower who is unacquainted with trade practices act on his own account and expect to make a profit. It is better by far to operate through a well organized, efficiently managed co-operative association that has had the necessary experience, or through a competent and responsible firm who knows the fruit exporting trade from top to bottom. In British markets at least, the present system of handling foreign fruits is regarded by experienced apple exporters as the very best that can be employed. But it is too complex for an inexperienced shipper to grasp except through the hard school of try and try again.

has become rather flexible. During the 1919 season fortunes were lost as a result of the drop in the value of exchange sterling and only those made a profit who could afford to deposit their English money in English banks until exchange increased.

Now, of course, it is not impossible to make satisfactory profits on the export apple deal—in fact, many growers make large profits—but to do so requires considerably greater marketing ability than in domestic transactions. Few farmers are expert in domestic marketing, much less in foreign marketing, and as soon as the American apple grower appreciates that he cannot play the export game without the assistance and advice of competent and reliable exporters the better it will be for him.

Of the 1,000,000 barrels of apples sent to England every year, fully 350,000 barrels are exported by individual growers who know little or nothing of the bare essentials of marketing fruit abroad. In practically every important apple growing section of the country at least one grower can be found who has had his fingers nipped by the export apple deal. Question him and he will admit that the reason for failure was the fact that with the pound foolish idea of keeping expenses at a minimum he endeavored to carry out "on his own" a transaction that only an experienced exporter of fruit is qualified to handle. Many growers not only make no profit but lose considerable money to boot.

## How to Export

The grower interested in marketing fruit abroad should first obtain from his state bureau of markets or from the U. S. Department of Agriculture all available information upon the export apple deal in general. These data should be carefully studied, and if the grower is still interested, he should then obtain from the state or federal agency a list of names of reputable American fruit exporters. The grower should then communicate with one or more of these exporters, give full particulars regarding the crop, such as variety, harvest dates, grading, local transportation facilities, and the like, and request a candid expression of the chances for success in marketing the fruit abroad. Once it is decided to undertake the deal, the ex-

must be taken with perishable shipments that journey long distances by rail and water than is necessary when shipments are sent but a short distance. Yet common sense has been used but little in the past for one of the chief reasons for dissatisfaction in the marketing of apples in England is that the fruit arrives in bad condition, due unquestionably, at least in part, to the fact that proper care has not been exercised in harvesting, grading, packing, loading and shipping.

According to a New York fruit exporter who handled 80 per cent of the Northwest boxed apple shipments during the war, "the loss from deterioration in transit from point of shipment to point of destination usually amounts to not less than 25 per cent, and during the past two or three years during which the conditions required using slow freight boats, the deterioration has amounted to as much as 35 per cent." This loss is due not only to improper harvesting and packing methods but to injudicious selection of steamers and through lack of efficiency in properly handling and stowing the fruit on the boats.

To determine the causes of deterioration from point of embarkation to point of destination the federal Bureau of Markets recently had special representatives observe the methods of handling the fruit from the docks to steamers, in the holds of the vessel, and the unloading practices on the other side. While the precise practices under observation are not identical for all ships, inasmuch as different loading methods are used on different docks, some crews of stevedores are less violent than others in their operations and the construction of the hatches and holds is not the same on all vessels, the result of the investigation indicated how simple it is to damage fruit and how necessary it is to use the utmost care in handling. There was so much breakage from all causes that in a single hold more than 100 barrels had to be re-coopered.

On the other side the bulk of receipts are sold through the large, well-established fruit auctions in the principal markets. These auctions are owned by fruit brokers' associations, the number of members being rather limited, with possibly not more

# With Our Editors

## Keep Up Fight on Fruit Juice Tax

JUST as this issue of *AMERICAN FRUIT GROWER* goes to press, word is received from Washington, D. C., that the Ways and Means committee has voted to cancel the ten per cent manufacturers sales tax on grape juice and to substitute a two cent a gallon tax in its stead. This is exactly in accord with the suggestions made in these columns, and with the wishes of the grape growers and juice manufacturers who have keenly felt the burden of the ten per cent tax, and who have been fighting for its repeal.

But although the Ways and Means committee has approved of the reduction in the tax, that does not mean the victory has been won. The matter must yet run the gauntlet before the Senate Finance committee in congress. While it seems probable the measure will be approved and the ten percent tax become a matter of history, yet every grape grower or juice manufacturer, as well as all others who are directly or indirectly concerned in the manufacture of fruit juices should bring all the pressure to bear that he possibly can, for the complete annulment of the ten percent tax.

The grape industry in this country cannot exist if it is taxed so heavily on its principal product that no profit remains for the producer or the manufacturer. Because of the distinct merit of grape juice as a food beverage, its use will be certain to extend many fold over the present consumption, if the product can be sold at a price attractive to the consumer. But with retail prices boosted by the ten percent tax to a figure that restricts sales to a minimum, and which during the past year caused them to drop to but 10 percent of their former level, there is nothing for grape juice manufacturers to do but quit.

Fruit juices will climb into popularity very rapidly when the consumer can buy them at reasonable figures. The *AMERICAN FRUIT GROWER* has vigorously sought the repeal of the ten percent tax on grape juice and for the enactment of legislation that will prevent the use of the name of any fruit or synthetic beverages, which because of low manufacturing costs can be sold at prices much below reasonable prices for pure juices. These fake fruit beverages are almost as injurious to the welfare of the fruit grower as are exorbitant taxes. The fruit juice industry, along with other fruit products and by-products must have the full benefit that can be derived from them, not only because they afford additional outlets for his products, but for the profit that comes from them.

It is the firm conviction of *AMERICAN FRUIT GROWER* that growers must give more serious and constructive attention to the manufacturing side of their industry. This has been done on a larger scale by grape and apple growers than by any others. Because of the use of grapes and apples in days gone by for the manufacture of alcoholic beverages, their juice products inherited an unsavory reputation upon the coming of prohibition, with the result a burdensome tax was heaped upon them by an unthinking congress. And what has happened? The expected revenue for the government was not forthcoming, and in the case of grape juice at least, the manufacturing industry was almost completely suppressed.

A repeal of the ten percent tax in grape juice, and other fruit juices is an imperative need, and we feel sure that it will occur, as is indicated by the action of the Ways and Means committee. But this is no time to stop fighting. Every fruit grower, in a measure, is concerned in this matter, because of the potential possibilities for all fruit juices, and efforts for the present should be directed to the Senate Finance Committee in Washington. From the hundreds of letters that we have received, we know that broad-minded fruit growers look at the matter of the grape juice tax as well as the fake fruit beverage in much the same light that we do. Read what Mr. H. H. Swain, secretary of the Indiana Horticultural Society, has to say in a recent letter to us:

"I certainly am interested in your campaign against fake fruit juices, not only from the standpoint of the fruit grower, but from the standpoint of public health. There are an astonishing number of people today who seem to think it is necessary to drink something out of a bottle, and a very large proportion of these are not very discriminating as to what it is. Hence a successful campaign against these fake drinks which are nearly all more or less injurious and practically none of any nutrient value, is of great importance, especially if at the same time a constructive campaign is pushed for the use of pure fruit juices."

Therefore the encouragement of this industry would be a boost for fruit growing. Whether you accomplish the object for which you contend or not, you will have the satisfaction of knowing that you have made a vigorous fight for a good cause, and I want to assure you that I shall be proud to aid you in any possible way in this matter."

Writing from the Ridgewood Orchards in Virginia, Mr. C. F. Massey makes a very good suggestion. He says:

My brother and I heartily subscribe to the good work you are doing in fighting the fruit juice fakes and will be glad to co-operate with you as opportunity permits. The pure juice from clean, sound apples makes a drink fit for anyone, and to fool the public with some 'near' juice not only brands that particular manufacturer as a crook but misleads the consumer by giving him a wrong impression of what the genuine fruit juice actually is. He swallows the imitation and thinks he is getting the real thing—with pretty poor results for the fruit grower.

This work you have undertaken should have the support of every fruit grower and should be given the widest publicity. If you have available any suitable copy for insertion in our local paper relative to this humbug business, we will be glad to see that action is taken. In this connection, why not prepare a short article and mail to interested growers to have inserted in local papers in the various sections in the country. Any newspaper in any fruit section would be glad to give it space and it would spread the warning widely indeed."

Florida produces large quantities of grapefruit, and will produce still larger quantities as the young groves come into bearing. There is, of course, a certain amount of the fruit that is unsuited for shipping, and the logical outlet is in the form of juice. The Southland Citrus Products Company has devised a way of putting this fickle juice on the market in a very delicious form. Mr. H. L. Collins of that company writes:

"We read your article in the May issue and felt like congratulating you heartily that you had the vision and the nerve to come out as strong as you did. With millions of boxes of citrus fruits going to waste down here, it does seem a crime that the dear public cannot have a pure fruit juice to drink when they so much want it, and not have citric acid, oil of peel and coloring matter with carbonated water foisted on to them in its place. Go to it, and I will talk my head off for the proposition."

And so it goes. But what are you doing about it? Will you, Mr. Fruit Grower, stand back and let the fruit juice business be put out of business in its babyhood, or will you let your congressman know that you want

it protected by suitable legislation? The ten percent tax is only one part of it. The fake fruit beverage is even more serious, as it affects the future of all fruit juices through the misleading use of the names of fruits on artificial products that are cheaply made and can undersell the pure fruit product.

## South Water Street

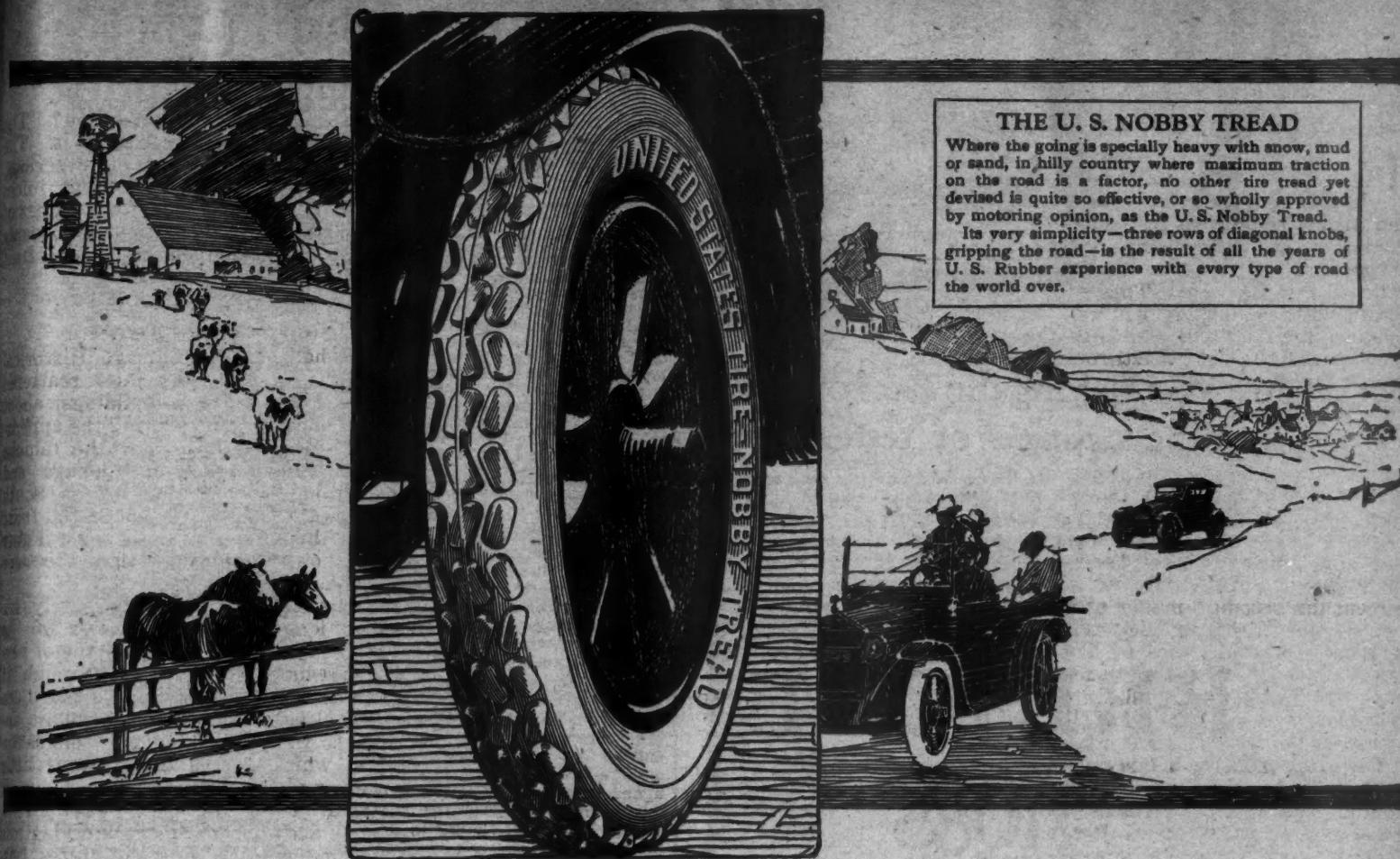
IN THE halls of the Chicago Historical Society is a picture showing a scattered row of log and frame buildings, about a dozen in number, representing the appearance in 1834 of what is now the famous wholesale fruit market of Chicago and known throughout the country as South Water Street. The illustration on the front cover of this issue of *AMERICAN FRUIT GROWER* shows the appearance of the same street in August, 1921.

This busy street, which is barely six blocks in length, is famous—not for its beauty, but for the immense volume of perishable products which pass through it daily. The value of this traffic has been placed at close to a half billion dollars annually. To the uninitiated, the congestion of traffic which gorges this famous little street during the early morning hours is astounding. There are teams, motor trucks, push carts and shouting men, hurrying and scurrying between the heaps of crates, baskets, barrels and hampers of cabbages, plums, potatoes, apples, through air laden with the pungent odor of onions and garlic and tinged with the sweet fragrance of grapes or cantaloupes.

Activity on South Water Street begins in the wee small hours of the morning and reaches its height between six and nine o'clock. During these hours, the congestion of vehicles is so great that none but a skillful teamster or motor truck driver can negotiate the narrow space through the center of the highway in spite of the one-way traffic regulation that prevails. But shortly after the noon hour, desertion begins and by the middle of the afternoon the hundreds of car loads of fruit and produce, and the hundreds of vehicles and humanity which thronged the busy thoroughfare have passed out of sight. The street is deserted except for the pigeons which come to feed on the fragments that have dropped, and for the street sweepers who clean the pavement each night.

No street in Chicago holds more of interest to the commercial fruit grower than does South Water Street. Here, any day in the year, except on Sundays and national holidays hundreds of car loads of the world's perishable products are moved. Many of the foremost fruit handlers of the country have their stores and offices on this busy thoroughfare, and here is the headquarters of every type of fruit handler, from the craftiest of speculators through the ranks of the commission man to the substantial brokerage firms and individual operators.

But just as the years have brought great changes in South Water Street from the time when Gurdon S. Hubbard built the first warehouse on the street almost a century ago, time will leave its record in still further advancement. It is recorded in the archives of the Chicago Plan Commission that the present congested wholesale fruit market must be converted into a beautiful and picturesque boulevard.

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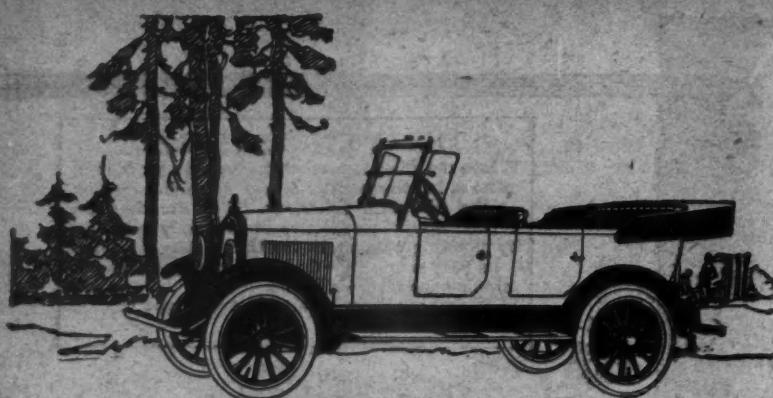
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# Orchard Problems and their Solution

by Paul C. Stark  
Associate Editor

### Peach Tree Borers

I am starting a small peach orchard and would like information regarding peach tree borers. I want to dig them out if I have any and don't know what to look for. Last spring one of my trees planted 18 months before, died after starting. I pulled it up and found the roots just below the ground covered with wax. What is the cause of this wax on peach tree roots? How can I keep it from forming?—G. G. F., Illinois.

THE peach tree borer which is light yellow and about 1 inch long injures the tree by boring into the trunk near the surface of the ground and just below the surface. The tree in its effort to heal the wound forms a waxy substance which generally indicates the presence of borers, although this waxy material appears on peach trees where they are wounded from other causes. Watch your trees carefully and keep the borers cut out. Cut the borers out with a sharp knife. Also use a pliable wire to shove down the burrow to kill the borers. The cutting out of the borers should be done not later than June 1st and again in the fall. Another recommendation is to mound up the earth at the base of the trees to a height of one or one and a half feet. This forces the insect to lay its eggs higher up on the trunk and makes it easier to get the borers out. The earth should be mounded up before June 1st and later in the fall it can be leveled down and locate the borers that have gotten in the trees and cut them out. Wherever you cut the bark of the tree to any extent in cutting out the borers, be sure to paint the wound with pure white lead and raw linseed oil.

### Red Raspberries

Will you please give me instructions as how to prune red raspberries and when is the best time? I have a plot of Cuthbert and they winterkill badly in this section. Is there a kind that would be better for this section?—P. T. C., Vermont.

IF YOUR red raspberries have been severely injured, it would be advisable to cut them back severely. The standard way of pruning red raspberries is to remove all the old canes after the crop has been borne, thus giving the young shoots a chance to grow and spread during the summer season. With the black raspberry, these young shoots are pinched back when they are about 1½ feet high, but with the red raspberry the practice is not to pinch back the young shoots.

Cuthbert is one of the best red raspberries, but as a rule the reds are not as hardy as the blackcaps. The Ohta, one of Prof. Hansen's new berries, has proven very hardy and vigorous.

### Strawberry Leaf Roller

As I have been bothered with leaf roller on strawberry plants last year I would like to hear from you some way of getting rid of the pest. I have dusted dry paris green on the plants but it did not seem to have much effect. I also was bothered with striped beetle on cantaloupe, cucumber and squash. What is best remedy for these pests?—G. J. K., Wisconsin.

IN CONTROLLING the strawberry leaf roller, it is advisable to poison the insect by spraying the foliage early in the season so that the young caterpillars will find practically all the foliage covered with poison. The moth of the strawberry leaf roller is small, being only about two-fifths of an inch across its expanded wings and is brownish in color. This moth appears usually in the early spring and lays its eggs on the under side of the leaves and they hatch in about seven days and the young caterpillars begin feeding on the leaves. In spraying, it

should be remembered that the strawberry plant is continually throwing out new leaves early in the season, therefore it is necessary to make several applications of spray material, the first one early in the season as soon as the moths are found to be flying about in moderate numbers. Use arsenate of lead at the rate of one and one-half to two pounds for each 50 gallons of water when using the powder form. In using arsenate of lead paste, use three to four pounds to fifty gallons of water. The application must be repeated every week or ten days as fast as new leaves are put out by the plants—one spraying does little good because the eggs are laid over a long period. Mowing and burning after the crop is harvested destroys all larva and pupa in the folded leaves.

Regarding the striped beetle on your cantaloupe, cucumber and squash, although you don't give full description and size of this insect, it is probably the striped cucumber beetle. Arsenate of lead powder sprinkled on the vines or mixed with flour and sprinkled on the vines should control it. It is a good idea to apply it when the dew is on the vines, and also try to get it applied on the underneath of the leaves.

### Cover Crops and Fertilizers

Are cover crops suitable for apples, suitable for peaches? Are melons good to grow in young peach orchard? How wide and how deep should holes be dug for trees to be set in? Is Chicago a good market for the Yellow Bellflower? Will using commercial fertilizer for intercrops in the young orchard in any way harm the trees?—D. A., Michigan.

COVER CROPS are splendid in either apple or peach orchards. They keep the ground from washing during the winter and when turned under in the spring add humus and plant food to the soil. Melons or most any cultivated crop are all right in young peach orchards. In planting trees, would advise you to dig your holes wide and deep—18 inches is a good sized hole although some people prefer a 2 ft. hole. In putting the soil back in the ground after planting, use the rich dirt around the roots. Yellow Bellflower is a good old time variety, but there are better yellow apples on the market. However, if you have Yellow Bellflower it should sell fairly well. The use of commercial fertilizers for the intercrops enriches the soil and is indirectly a benefit to the orchard.

### Cotton Seed Meal for Trees

Is cotton seed meal as good for young fruit trees as barnyard manure? I have been told that cotton seed meal is better than barnyard manure but should like to have your opinion.—F. N., Massachusetts.

COTTONSEED meal is a very good fertilizer. It is the product formed after the oil has been removed from the cotton seed. It contains approximately seven per cent of nitrogen along with two per cent of potash and three per cent of phosphoric acid. Cottonseed meal is also valuable for cattle food. It is said to be not profitable to use cottonseed meal for a fertilizer if it costs over \$25 per ton. Manure varies in strength according to the condition of the manure and the kind. It is estimated that manure is worth \$2.00 to \$2.50 per ton. Manure contains a good per cent of nitrogen and potash. However, it is rather deficient in phosphorus. Manure also has the value of adding humus to the soil in addition to its fertilizer value.

### Bosc Pear

Would like to know how to pronounce the name of a certain variety of pear which I often read about which is Bosc.—F. L., New York.

THE variety Bosc pear is pronounced as if it were spelled "Bosc."

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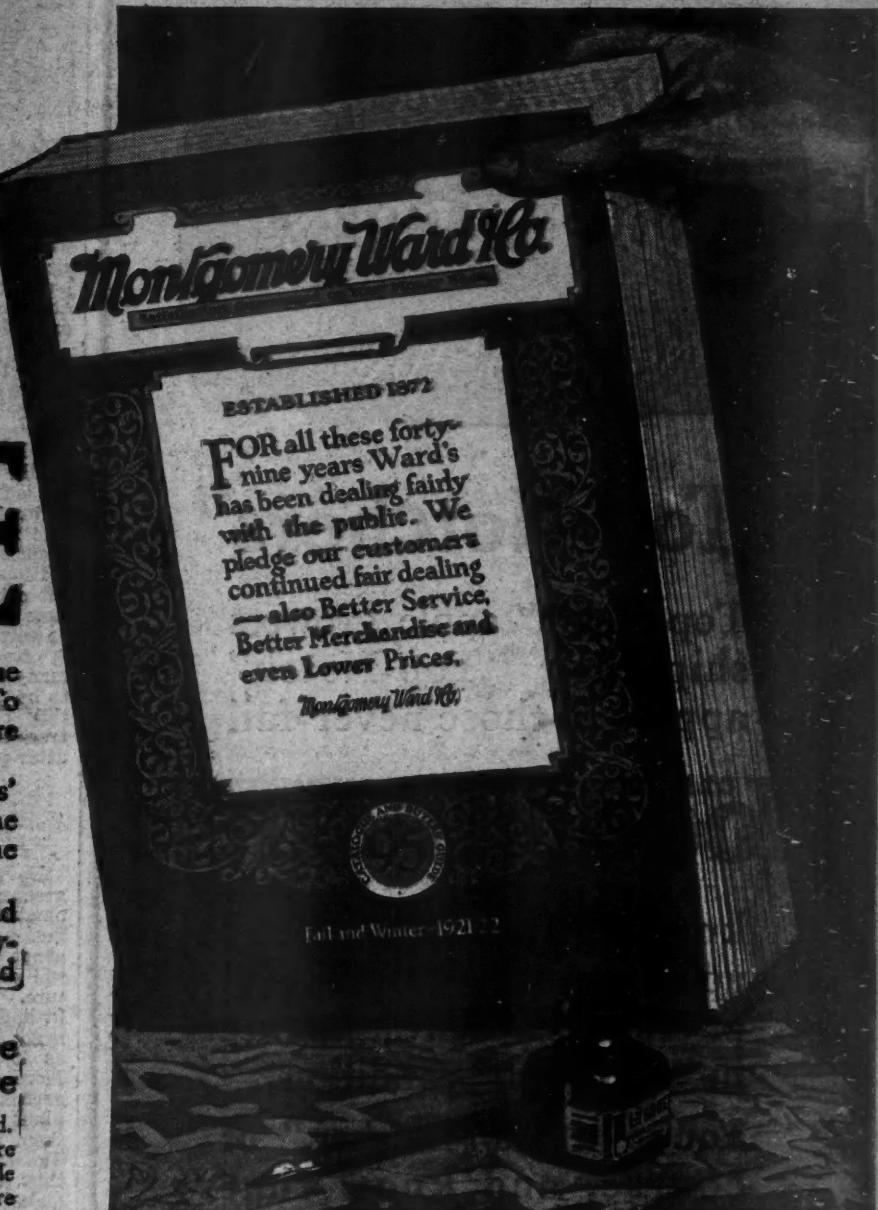
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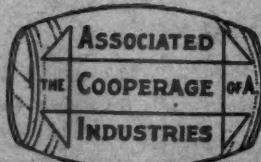
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### Wants Early Bearing Trees

Mr. Mussing of Illinois writes that his dwarf apple trees planted eight years ago have not borne fruit yet with one exception. They are on very rich soil. He asks why these trees have not come into bearing. This is a question I am asked more often than any other.

There are many reasons why. First, the soil may be so fertile as to induce extraordinary growth, which is not calculated to bring about early fruiting. Second, wise pruning may not have been given. Cut back annually the last year's shoots, that is the ends of branches half their length, to promote early fruiting. This will also retard any widespread branching or high-topped trees.

People are too impatient and often cut out their orchards just about the time they are beginning to bear fruit, or getting ready to do so, all of which is often a fatal mistake. There are many things in real life that teach us to be patient. We need such lessons, thus can learn something from the trees that do not begin to bear quickly after planting.

### More Care With Evergreens

Do not expose the roots of evergreens for even a few moments in planting. See that the earth is made fine and then pack the dirt firmly about the roots, leaving some loose soil on the surface to hold the moisture. Then keep the surface stirred a little during the dry hot weather. It is not as easy to transplant evergreens as it is to transplant apple trees. More care is required as the evergreens are always in leaf, and yet we plant thousands upon thousands of them without scarcely losing a tree. The smaller the trees are the safer they are to transplant. Most people make the mistake of planting too large evergreens.

The planting of evergreens on a hilltop need not be difficult, but the soil must be in good condition and kept so. Most people do not pack the soil firmly over the roots and this neglect is fatal even to apple, pear and cherry trees.

### Accidents

ON AUGUST 22d last there were 24 deaths from drowning, 22 from automobiles, 20 from railroad accidents, 12 from falls of materials on persons, eighty by street cars, four by electrocution, 61 by miscellaneous causes, giving a total of 151 accidents on one day throughout this country.

The loss of life through the use of automobiles is constantly growing. These accidents might easily be reduced. The wonder is that there are not more automobile accidents when we consider the risks that drivers make in going about and turning corners at high speed. We have often been told that the farm was comparatively a safe place from accidents but I cannot agree with such an opinion. A farmer is constantly at work with pitchforks and various kinds of machinery, in danger from kicking horses and from the jabs of horned cattle. When it comes to the gathering of fruit, the dangers are increased, for the men must climb on ladders or trust their weights upon decayed branches. Whatever the occupation or pastime of the people it must be conceded that gross carelessness occurs with every class. For instance,

in past years I can recall many nearby accidents of people who fell down cellar stairs owing to the fact that the cellar door opened toward the cellar. Of late years we hear less of such accidents for the reason that architects have built the doors to open toward the kitchen instead of toward the cellar.

### Planting Strawberries

A SUBSCRIBER AT Fredonia, Pa., says he is going to plant strawberries largely next spring and asks whether strawberry plants can be successfully set out with a planter, I infer such as is used in planting cabbage plants.

My answer is that I have had no experience with any mechanical planter, but from what I know of strawberry planting from many years experience I would say that it would be too risky to use any planting machine in planting the strawberry. It is of vital importance that each strawberry plant should be set at a certain depth and this could not be easily done by any planter except such as the human hands and brains afford.

Many planters of the strawberry set plants too deep, covering the crowns of the plants, which is fatal. Other planters do not plant deep enough, leaving the crown to wither in the hot sun. After planting I go over the rows very carefully, treading in the earth around each plant as firmly as possible with my feet, having my hoe in my hands for the purpose of bringing up more soil to cover the crown if not set deep enough, or to remove some of the earth occasionally if I find a plant set too deeply.

### How To Do It

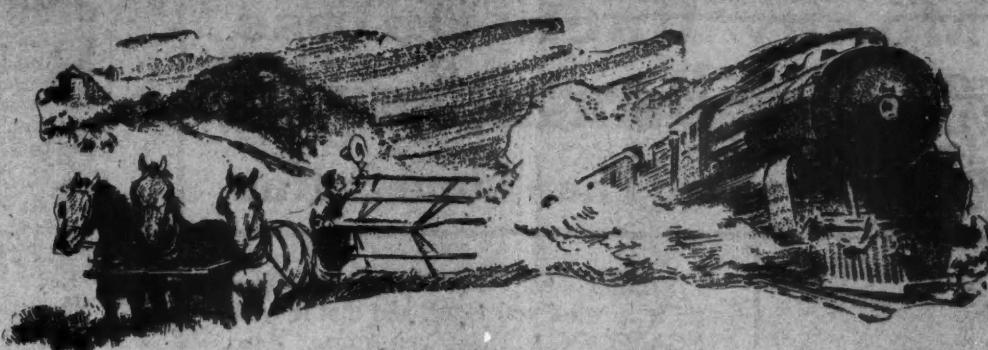
A SUBSCRIBER asks if it does not injure gooseberry bushes to tip off some of the leaves in the act of picking the gooseberries. My answer is, "No." Little of the leaves are removed in grasping off the fruit and I never saw any injured to results. A good pair of gloves would last a long time without showing much wear after tipping off gooseberries as indicated.

A patron asks how to propagate but he does not state whether he refers to gooseberries or something else. Most nursery gooseberries are propagated by rooted layers. This is accomplished by bending down the branches in May or June and covering with earth as much as possible of the canes without covering up the tips entirely.

### Overgrown Horses

I INSTRUCT my men not to buy overlarge farm horses. Many years ago I went with a friend to a large farm auction. Two very large and magnificent bays were offered. My friend bought this team which were probably unsurpassed over any other team in the town or county. I found out later, however, that my friend was greatly disappointed in this team which could not stand the traffic on the hard road. They were simply available for work on the farm. But the team did not have great endurance. It took a vast amount of feed to sustain this team. Taking it all in all, my friend tells me that he would never again buy an overgrown team for farm use.

Four thousand seven hundred and sixty acres of grapes were planted in Kern county, California, last spring. Over three thousand acres of this were planted to the Thompson Seedless variety.



# Running Farms and Running Railroads

## I

## The Farm Under Private Ownership

Back in January, 1917, there was a farmer who had a **GOOD FARM**, which was worth \$20,000. He had good horses and live stock, with fences, buildings, wagons, plows and other implements in **GOOD REPAIR**.

In the three previous years the farmer had made a **LIVING** on this farm, and after all expenses were paid found that he had made a **PROFIT** of a little over a thousand dollars a year—a little over 5 per cent on the **VALUE** of his farm.

He had applied **SUFFICIENT FERTILIZER** each year, and his land was in good condition for **FUTURE PRODUCTION**.

## II

## The Farm Under Government Control

But, because it was necessary to help win the war, the **GOVERNMENT TOOK POSSESSION** of this farm, held it for 26 months and promised to pay the farmer **A RENTAL** equal to what he had made in the three previous years.

[The Government DOUBLED the wages of the farm hands and SHORTENED their working hours.

It established working conditions under which it took MANY MORE MEN to do the SAME WORK, and under which, oftentimes, men were paid for work NOT DONE.]

But the Government DID NOT put on the farm the amount of fertilizer necessary. It let the fences get into **BAD REPAIR**; the roofs of some of the buildings leaked. The farm implements fell into bad repair. Nor did the Government REPLACE all the tools that were worn out.

The Government promised to **PAY FOR THE DAMAGES**, but up to date the farmer hasn't got all of his money, though he needs it badly to **KEEP GOING**.

## III

## Back to Private Ownership Again

At the end of the 26 months the Government turned the farm back to its owner.

All the farmer's tools and wagons had been put indiscriminately in a pool and used on one farm or another regardless of ownership. Naturally no one had taken as good care of them as the farmer would have taken of his own implements.

At the same time the Government required the farmer to **CONTINUE WAR-TIME WAGES** and working conditions.

It would not permit him to decrease wages nor to require a better day's work without exhaustive hearings before a Government board.

The prices of his farm products had increased somewhat, but **NOT NEARLY ENOUGH** to cover increased wages and the increases in the cost of all his supplies—so that in 1920 he made just \$62 net profit on the farm which before the war was good for \$1,000 net profit.

At the same time the demand for his products began to **FALL**, and for some of them there was hardly a market at any price. Then many people began to tell the farmer that he could make money if he would **REDUCE** the prices of all his products, although on account of high wages he was already selling some of his stuff without profit, and even **BELOW COST**.

## IV

## Parallel Case of the Railroads

This farm is **IMAGINARY**, But compare item by item and you have a true picture of the railroad situation.

Although the railroads could not earn their operating expenses and taxes in January and February, it was July 1st of this year before they could get any relief from high wages. And then there was deducted from their payroll only \$375,000,000—say **ONE-SIXTH**—of the increase of the past four years.

## Association of Railway Executives

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New York

Munsey Building  
Washington, D.C.

*Those desiring further information on the railroad situation can secure it by addressing the offices of the Association*

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2 views of our 27,000-tree orchard near Milton, Del., 25 months after planting. Apple trees, root and branch, dipped in SCALECIDE; peach trees, top only dipped. Sprayed with SCALECIDE since.

**WE GUARANTEE** that, if you will divide an orchard, your worst or best, in two parts equal in general condition, and for three years spray one part with SCALECIDE according to our directions and the other part with lime-sulfur, giving the same summer treatment to both parts, the part sprayed with SCALECIDE will be better than the part sprayed with lime-sulfur—in the judgment of three disinterested fruit growers—or we will refund the money you have paid for the SCALECIDE.

**A BETTER ORCHARD!** That is what you want, and that is what SCALECIDE will help you have. Read our *Guarantee*—it is broad enough, definite enough, liberal enough to meet the desires of every fruit-tree lover. SCALECIDE controls scale, fire blight, canker, pear psylla and aphid—the control of which is necessary to a *better orchard*—but it does more; it has an *invigorating effect* upon trees and foliage, insuring plumper fruit spurs and a better chance for fruit the following year.

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For 17 years SCALECIDE has been making better orchards—and with only about one-half the labor required for spraying with lime-sulfur. Moreover, SCALECIDE is pleasant to use and will not injure even the eyes. This year use SCALECIDE!

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It may be that what you want is advertised in the advertising columns of this issue of the American Fruit Grower. If not, just check on the above list whatever you are interested in, return the list to us with your name and address and we will supply you with information as to the best means of obtaining it.

#### ADVERTISING DEPARTMENT

AMERICAN FRUIT GROWER

State-Lake Building, Chicago, Ill.

## The Orchard Tour in Michigan

BETWEEN three hundred and four hundred fruit growers of Michigan with their families and a few guests spent August 2nd to 4th in an automobile tour through the orchards of Oceana and Mason counties for the purpose of becoming personally acquainted with each other and how their fruit farms were being operated. It was a jolly party throughout the entire trip of some two hundred miles, and although tired and dusty, their cars were reluctantly turned homeward when the last stop had been made.

The weather was delightful throughout the entire trip, aside from some dust encountered over a portion of the trip. A splendid, soaking rain had fallen the night before the party assembled at the Graham Experiment Farm, two miles outside the city of Grand Rapids. This rain had cooled the air, laid the dust and made conditions good for the start. The Graham Experiment Farm was selected as the starting point, since it had recently been acquired by the Michigan Agricultural College for experimental work on a commercial basis. Fifty acres of this farm was presented as a gift to the college by Mr. and Mrs. R. D. Graham, and the remainder was acquired by purchase. Several acres of old apple trees now standing afford material for certain experiments that are particularly useful to the great acreage of the bearing orchards of Michigan. Several additional acres have been planted with apples, peaches and cherries in which experiments have already been begun in cover cropping, pruning and fertilizing.

The manner in which these experiments are being conducted was explained by Professors C. P. Halligan, Roy E. Marshall, W. C. Duton and H. D. Hootman. Several years will be required for the maturity of the experiments in a manner that will afford the desired information. But in view of the scale on which many of the experiments are being conducted, the results will have a very large value from the standpoint of the commercial grower. One of the experiments which will be watched with particular interest is that of fertilizing, as there is a wide amount of interest in Michigan fruit circles in the subject of orchard fertilization.

As a result of the visit to the Graham Experiment Farm, Michigan fruit growers have a better knowledge of just what the specialists in the college are doing to solve some of the perplexing problems that confront the commercial fruit grower.

From the Graham Experiment Farm, the party was conveyed in some thirty-five or forty automobiles to the widely known and beautiful Vincennes Fruit Farm of Treasurer J. P. Munson on the outskirts of Grand Rapids. On this farm there are some thirty or more acres of grapes, some apples, currants, gooseberries and other fruits. Here Mr. Munson had many of the party get into his motor truck and ride over the well arranged roadways through his farm. An abundance of beautiful grapes of such varieties as Worden, Concord, Delaware and a few others were to be seen on the vines, although showing the effect of the severe hailstorm that passed over the vineyard just a few days previously.

Leaving the Munson farm, the party headed for the town of Shelby where the night was to be spent. The route lay over splendid asphalt, cement and gravel highways, past many beautiful orchards, many of which were carrying from fair to excellent crops of peaches, plums, pears and apples. At Shelby the party greatly overflowed the limited hotel accommodations, but through the hospitality of the local fruit growers, all of the party were made comfortable for the

for September, 1921

night in private homes. This only added to the pleasure of the journey through increasing the acquaintance of all and adding a charming bit of variety.

On Wednesday the party gathered early and paid a flying visit through the Oceana Canning Company's modern plant, where they saw apples being canned on a large scale. Each visitor was presented with a can of pork and beans, and of sliced peaches packed by the cannery. Because of the many inspections to be made during the day, but few moments could be spent in this interesting factory, and the party proceeded to one of the beautiful, inspiring and heavily loaded orchards of Thomas Smith, where amazement greeted the visitors. This orchard at one time was in a run down condition, but from its present appearance in shape and vigor of the trees, and the heavily loaded branches, Mr. Smith has been a very skillful operator. It would indeed be a hard matter to find an orchard more heavily loaded and with fruit of more uniform size than was seen in this orchard. Mr. Smith has made very extensive use of sheep manure in this orchard, and his spraying has been so thoroughly done that not one blemished apple was to be seen.

Later in the day another of Mr. Smith's orchards was visited, where conditions were almost identical. In this second orchard many visitors were greatly surprised to see the great quantity of small apples on the ground under some of the trees. Mr. Smith stated that these were removed in thinning the fruit and that as many as 3,500 to 4,000 apples had been removed from some of the trees in this thinning operation. Another object of interest to many of the visitors was the manner in which several winter injured trees had been bridge grafted.

Two other orchards of interest were visited on Wednesday, these being the fruit farms of President Hawley and of Benton Gabbert. Here experiments with fertilizers were being conducted. Sulphate of ammonia was the principal fertilizer being tried, and while climatic conditions had not been favorable for the best results from the fertilizers, their effect was visible in the heavier foliage and deeper green color of the leaves. The opinion prevailed that there should be a much greater use made of this fertilizer than has been the custom since many of the orchards of western Michigan are showing evidence of impoverishment of the soil. This is evidenced by the scanty growth and lessened production.

The evening of the second day of the tour will long be remembered by all who were privileged to take part. This was because of the banquet served in the Masonic Hall at Hart by the Hart Commercial Club and the ladies of the Congregational Church. No speeches were made at the banquet aside from an address of welcome by Attorney Earl C. Pugissey with responses by T. A. Farrand, secretary of the society, George Hawley, president of the society and James Nicol, president of the State Farm Bureau.

The last day of the tour was even more inspiring than the preceding, as the farther north the visitors went, the better the crops became. Many fine orchards were briefly inspected, including Fred Peterson's and Smith Hawley's. Mr. Hawley is a veteran fruit grower of Mason county and the first man in his locality to practice spraying. At C. D. Kistler's, the visitors were shown an old orchard in which experiments with nitrate and phosphate fertilizers were being tried on trees in a heavy blue grass sod. A heavy application had been made, but because of the lateness of the application together with the dry weather that has prevailed, little effect could be observed aside from a slight difference in the color of the fertilizer on the trees receiving the fertilizer. Another orchard of interest was that of Mrs. James Butler, where skillful management under difficult conditions had produced an excellent orchard

which was carrying a very heavy crop of splendid fruit.

A farewell dinner for the party was served on Howard Cowell's farm in a beautiful grove overlooking lake Michigan. Many of the visitors took advantage of the opportunity for a swim in the lake, and after heartily consuming a most excellent dinner served in real picnic style, the tour was completed. Then came the return journey home, with each member of the party pleased with what he had seen and heard and looking forward to a repetition of the tour next year.

#### NEW CROP OF SUCKERS YEARLY

In spite of the publicity that has been given to fake nostrums that are alleged to cure all troubles of fruit trees and make spraying unnecessary, there is a new crop of suckers born every year who bite at these age old fakes whenever they show up. In Washington this season, two such curials have just been captured by Charles L. Robinson, supervisor of horticulture in the State Department of Agriculture. These dopes, consisting of a white powder, were being peddled to growers at \$2 a small package, and were alleged to do away with the need for spraying.

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## Operating A 500-Acre Orchard

(Continued from page 3)

so that it can be easily irrigated. It is Mr. Yaggy's intention to plant a half section to apple trees in the near future. Much of the preliminary survey work has been completed. The plans call for a central electrically operated pumping plant, with a huge pump attached to a series of bored wells. One large canal will carry water for the entire orchard and frequent laterals will make it possible to quickly irrigate a considerable tract. Mr. Yaggy says the cost of leveling land varies from \$5 to \$25 an acre. Eventually he hopes to have a new 500-acre orchard under irrigation.

When the Yaggy orchard was set out 10 varieties of apple trees were planted in an effort to find out which was the best suited to this district. Some one had to pioneer in this respect, but Mr. Yaggy urges that no experimental work be attempted on

any large scale in a commercial orchard, because it does not pay.

During recent years practically all the Ben Davis, Gano and Missouri Pippin trees have been removed from the Yaggy orchard because it was found they were not profitable. Other varieties could be grown to better advantage and the task of marketing them was easier. This orchard now produces Jonathans, Grimes Golden, Rome Beauties, Mammoth Black Twigs, York Imperials and Winesaps. There are also two summer varieties, Maiden Blush and Yellow Transparents.

Mr. Yaggy is very partial to the old fashioned Winesap. He says this district is peculiarly adapted to this apple and that the market is always capable of absorbing almost any quantity. The Winesap, that is the old fashioned variety, is a good keeper, an excellent eating apple and the tree produces well, he says. And so Mr. Yaggy is working more or less consistently to get on a Winesap basis. He declares that if Arkansas river valley orchardists will specialize on old fashioned Winesaps they can soon build up an apple reputation that will reach to all parts of the country and will insure them a profitable future. Besides, the man who specializes on one variety probably will be able to handle it more efficiently and successfully than if he divides his attention among many varieties.

### Does His Own Selling

To handle the enormous crop from his orchard, Mr. Yaggy constructed a huge packing and temporary storage house on the Santa Fe main line near his orchard. This house is 200 feet long. It is made of 2-inch stuff and there is a concrete pier every 7 feet to support the floor. The building has a capacity of 40,000 made up boxes. Five freight cars can be loaded simultaneously at the dock which runs along one side of the building. Mr. Yaggy does not plan to hold apples in storage at this plant later than December 1. However, every season he sells large quantities of apples in the community and supplies small lot shipments to dealers in surrounding towns.

All apples not marketed immediately are stored at big market centers such as Kansas City, Mo., Chicago and St. Louis. Mr. Yaggy handles the marketing himself and by having the fruit stored at important market points he is able to take advantage immediately of an upturn in the market, whereas if he had the apples stored in Hutchinson and had to ship to Chicago when the market turned upward, it would easily be possible that by the time his apples arrived at that city, the market would have swing downward again.

Mr. Yaggy declares that through his system of marketing he has been able to average from 10 to 25 cents more a bushel for the same quality of apples than other farmers in the community. On the basis of an annual production of 100,000 bushels this would mean an extra income of from \$10,000 to \$25,000.

But Mr. Yaggy would rather sell his apples in the mid-west market than ship them outside. He believes that in the future the apple industry in the Arkansas valley will grow to such an extent that it can supply the needs of surrounding states. The way it is now many western apples are shipped in and many Kansas apples are shipped to the east. He hopes to be able to correct this situation in the future and raise Kansas apples for Kansas consumers and for folks in western Missouri and Oklahoma. If this is accomplished, he says, it will give the consumer apples at a lower price and at the same time will bring greater returns to the producer.

The trees in this orchard are sprayed once before blossom and from 3 to 5 times thereafter, or as many times as seem necessary. Eight spray rigs are used in spraying. The tanks

of these rigs hold 300 gallons. Five other rigs of 200 gallon tank capacity are held as a reserve but they have not been used for several years.

"We can maintain a pressure of 300 pounds with our rigs," said Mr. Yaggy. "However, we do not find that pressure necessary or desirable in most instances. We like a pressure, for ordinary spraying, of 225 pounds, and have little difficulty in maintaining that pressure."

"Probably the best day's spraying we have ever done was to apply 23,300 gallons, with seven rigs running, in 10½ hours. We were not out for any record and were using only moderate size outlets in our nozzles."

"We have centrally located spraying loading stands in the different orchards and do not use supply tanks. These loading stands are elevated and enable us to make a very fine grade of Bordeaux mixture and to load a 300-gallon spray outfit by gravity in 1 minute and 15 seconds actual time. Water is supplied to these elevated stands by well and centrifugal pump."

The loading stands are about 6 feet high.

In the matter of pruning on the Yaggy orchard the idea followed is to shorten the ends of limbs, the object being to get uniform distribution of fruit and foliage nearer the main trunk of the trees. This results in shorter, heavier branches and brings the fruit within easier reach of the pickers. The limbs become stronger and this system keeps the trees closer to the ground.

#### Soil Management

In cultivating the orchard both a disk and plow are used. If the cover crop is heavy it is disked. The aim is to get the soil in good condition. Some harrows are used on an average of once in every 10 days from April 15 to August 1. After August 1 native grasses, mostly crab grass, are permitted to grow. Often cover crops, such as cowpeas, are planted in the orchard.

After considerable experimental work with fertilizers, Mr. Yaggy decided that he could get best results with barnyard manure. In 1912 and 1913 he applied 100 carloads, each car averaging 100,000 pounds of manure. In 1915 he harvested a crop of 210,000 bushels of apples, the largest production in the history of the plantation.

Mr. Yaggy has also used a great deal of chicken manure. He took a three year contract from two poultry plants to haul away the manure. He used it first on some young trees with the result that many of them were killed. Then Mr. Yaggy made a compost. The chicken manure was put in in two inch layers with straw and rock phosphate. In this condition it gave excellent results when put on the soil.

Cowpeas are often planted in the orchard. They seldom are plowed under in the fall, however, because Mr. Yaggy says he does not like to leave the ground bare. He pastures the cowpeas in the older orchard with cows, guarding against the animals injuring the trees.

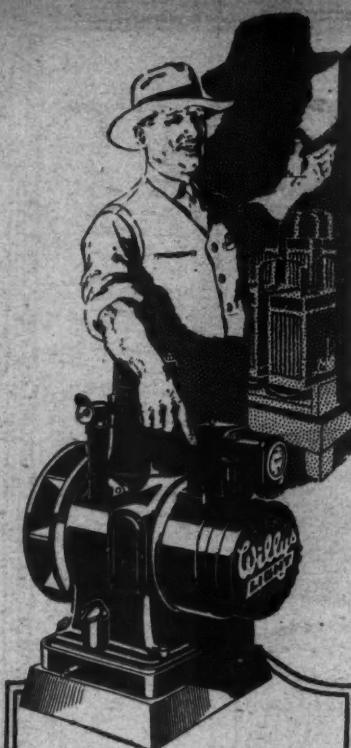
During the last 30 years more than \$1 million catalpa fence posts have been produced on the Yaggy plantation. Mr. Yaggy now has 440 acres in catalpa trees. These are cultivated during the first two years. A post crop matures in from six to 10 years, according to the size of the posts desired. Mr. Yaggy favors cutting the entire acreage planted at the same time, rather than making two or three selective cuttings. He says it is more profitable to clear the entire acreage at one time.

Some pears and peaches are produced on the plantation but not in any quantity to compare with apples. Mr. Yaggy is an "apple fan" and he intends to remain so. And being an "apple fan" he is a Winesap enthusiast. If he follows his present inclinations he may end up as the Winesap king of the Arkansas river valley.

#### HARDY AVOCADO DISCOVERED IN ECUADOR

A variety of avocado, or alligator pear, the fruit of which attains a weight of 18 ounces and the trees of which will stand some frost, has been sent to the office of foreign seed and plant introduction, United States Department of Agriculture, by Wilson Popeno, plant explorer in South America, and buds of it are now growing in the department greenhouses. Curiously, the new avocado, harder against cold than the ordinary West Indian and Guatemalan varieties, was discovered in Ecuador, a country situated on the Equator. The region, hitherto unknown as producing this fruit, is in what is known as the Chota Valley, 6,000 feet above sea level, giving a climate comparable to many regions much farther north. Most of the fruits of varieties of this Mexican race are small. This one has fruits comparable in size with those of the more tender races. Regions occasionally visited by a temperature of plus 18 degrees F. have produced bearing trees of the Mexican avocado.

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These are the most satisfactory rust-resisting galvanized sheets manufactured for Roofing, Siding, Tanks, Silos, Plumes, Univers, etc. The Keystone added to regular brand indicates that Copper Steel is used. Sold by weight by leading metal merchants. For fine residences and public buildings use KEYSTONE Copper Steel Roofing, Tin Plates. Write for free "Better Buildings" booklet containing building plans and valuable information.

**AMERICAN SHEET AND TIN PLATE COMPANY, General Offices: Frick Building, Pittsburgh, Pa.**

transit. His investigations were carried on this season with peaches, and his letter follows:

"The losses in shipment of peaches and other perishable fruits and vegetables during transportation, even under most favorable conditions such as icing or refrigeration, are so great, especially so some seasons, that we have been studying the possibility of disinfecting or sterilizing fruit before picking or packing.

"A limited number of experiments undertaken this season have been so uniformly successful, even under most adverse conditions, that we feel quite sure that larger experiments on a commercial scale and under other conditions will be carried out another season.

"Through the kind co-operation of Messrs. Berckmans Bros., Mayfield, Ga., and Mr. C. H. Marks, Hillsboro, Ga., we have had ten crates of peaches shipped at different times this season, a part of each crate treated and the other untreated.

"The treatment consisted of spraying the peaches from one to three days before picking with one part 'Sulfo-cide' to 200 parts of water, to which one cake of ordinary soap, first dissolved in hot water, is added to each 50 gallons of spray; or the peaches were dipped in this solution and allowed to dry before packing. The material leaves no mark on the fruit and no taste or smell after two or three days. Even a chemical analysis of the skins failed to show a difference between the treated and untreated.

"We have a few Belle of Georgia peaches in the office 21 days after shipment that are drying up but not rotting. The weather in New York during July has been very humid and hot. The fruit has remained in this unfavorable atmosphere all the time, shut up at nights and holidays without even ventilation.

"Records of two or three shipments alone will be necessary. A crate of Belle of Georgia peaches shipped by express from Berckmans Bros., Mayfield, Ga., July 5, 1921—three baskets sprayed three days before picking and three baskets unsprayed—arrived in New York, Friday, July 8th. Outside of a little bruising, arrived in good shape. One basket each of sprayed and unsprayed peaches were selected and left in the office. Saturday, the 9th, one peach showed rot in the unsprayed basket.

Unsprayed Basket.—July 11th—10 peaches showed brown rot, removed.

July 12th—3 peaches showed brown rot, removed.

July 13th—3 peaches showed brown rot, removed.

July 14th—3 peaches showed brown rot, removed.

July 15th—5 peaches showed brown rot, removed.

July 16th—1 peach showed brown rot, the last peach in basket.

Sprayed Basket.—July 11th—no rot.

July 12th—no rot.

July 13th—no rot.

July 14th—4 peaches showed rot, removed.

July 15th—4 peaches showed rot, removed.

July 16th—5 peaches showed rot, removed.

Seventeen peaches left perfect.

"A number of peaches disappeared during the ten days in the office; this accounts for the shortage in both baskets.

"The rot in the sprayed and unsprayed baskets differed considerably. In the unsprayed basket the rot was characteristic of brown rot. The rot on the peaches in the sprayed basket appeared to be Rhizopus nigricans, or ripe rot, and none made its appearance until the tenth day from shipment.

"You will notice from the report that the basket of sprayed peaches the ninth day after picking and shipped by express 700 miles without refrigeration was in perfect marketable condition, while Messrs. Dingfelder Brothers, Commission Merchants, report that in car shipped

(Continued on page 19)

*International*

MOTOR TRUCKS



## Big Cuts Have Just Been Made in the Prices of International Motor Trucks.

### Take Advantage of the Fact and Invest in Economical Hauling.

THE FARMERS of America have invested in 80,000 motor trucks because it is so obvious a fact that the use of horses for hauling—horses plodding at snail-pace over the roads these modern times—is an extravagant waste. Such practice is a millstone on the neck of the farmer's time, and the owners of the 80,000 have thrown the millstone off. They have advanced a long step toward maximum farm efficiency.

On the basis of the 15-year history and reputation of International Motor Trucks in city and rural hauling, we urge you to consider the present complete line of Internationals. Sizes range from the 1,500-pound Speed

Truck to the heavy-duty 10,000-pound truck—a size for all needs. Price reductions range from \$100 up to \$900 per truck. When you come to the revision of your own hauling methods, trust one of these trucks, and International Service, to work for you faithfully.

The Harvester Company has been working very long and intimately with farming and farm problems. Its products are practical and successful farm machines. It has built a good reputation among farmers out of 90 years of experience. Because of that, we ask you to rely on the International Motor Truck. Write us for the address of the nearest distributor.

### INTERNATIONAL HARVESTER COMPANY

CHICAGO

OF AMERICA  
INCORPORATED

USA

### World's Best Roofing

At Factory Prices

"See" Chester Metal Shingles, W-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofings, Siding, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Positively greatest offer ever made.

#### Edwards "Res" Metal Shingles

cost less; extend three ordinary roofs. No painting or repainting. Guaranteed rot, fire, rust, lightning proof.

#### Free Roofing Book

Get our wonderfully low prices and free samples. We sell direct to you and save you all in-between dealer's profit. Ask for Book No. 100

#### LOW PRICE GARAGES

Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up any place. Send postal for Catalogue showing styles. THE BIRMINGHAM CO., 206-208 Pine St., Cincinnati, Ohio.

**FREE**  
Samples &  
Roofing Book

### OTTAWA

1½ H-P ENGINE IS \$35.50  
Now, only \$35.50

Other sizes 2 to 22 H-P at proportionally low prices.

90 Days Trial—10 Yr. Guarantee

Good engines at low prices because made in large quantities and sold direct from factory.

Manufacturers, Purchasers, Sellers, Operators, etc., can choose from

#### FREE ENGINE BOOK

Get your price schedule

and book of full details.

OTTAWA MFG. CO.

1172-A KING SPRINGS,

OTTAWA, KANSAS

### We Pay \$6 a Day

taking orders for Inside Tyres—inner armor for automobile tires. Positively prevent punctures and blowouts. Guaranteed to give double tire mileage. Work Spare Time or Full Time. Every auto owner buys on account of low price. Enormous demand. Write for catalog and special terms to County Representative.

AMERICAN ACCESSORIES CO., B-1407 CINCINNATI, OHIO



Introducing—



*—an improved group of tobacco products designed to completely control plant lice, thrips and similar soft-bodied insects  
Nicotine percentages guaranteed*

SPECIAL scientific processes of manufacture and a large supply of raw materials, permanently assured, enable us to offer you this unusually effective group of insecticides.

Whether your problem is one of spraying or dusting, fumigating or vaporizing, you can absolutely rely upon one of the four Hall products.

#### Hall's Nicotine Insecticides are:

Hall's Nicotine Sulphate (40% nicotine guaranteed) for outdoor spraying.

Hall's Tobacco Dust (1% nicotine guaranteed) for dusting.

Hall's Nicotine Fumigator (12½% nicotine guaranteed) for fumigating greenhouses.

Hall's Free Nicotine (40% nicotine guaranteed) for greenhouse spraying.

As a fruit grower, you are probably most interested in

#### Hall's Nicotine Sulphate 40%

This very effective insecticide is prepared under improved methods so that it is absolutely uniform in content and contains no impurities. This means that you get a fine mist from your sprayer, which is, of course, necessary in order to hit and wet every insect on the tree.

Due to its high concentration Hall's Nicotine Sulphate 40% is very easy to handle. One part Hall's to 800 to 1000 parts water makes an extremely effective spray.

In  $\frac{1}{2}$ , 2 and 10 pound tins. If your dealer is not supplied write us direct.

HALL TOBACCO CHEMICAL CO.

St. Louis, Mo.



#### Control these pests with Hall's

Such destructive pests as aphids (pictured above), thrips and similar soft-bodied insects can be completely controlled with Hall's Nicotine Sulphate 40%.

#### Orchard Queen Cider Mill



#### 100% JUICE

It doesn't crush the apples, but grates or crushes them, breaking the juice cells so that when the pomace is pressed in the sanitary cloth sacs, all of the juice is extracted.

Orchard Queen is the simplest, easiest operated, cleanest and most efficient of cider mills. No metal in cider or hopper to discolor juice. Operated by hand or power. Strongly built for a lifetime of service. Mill twice as much juice in the same time as other cider mills. Price in two sizes. Our folder explains in detail the construction and operation of the Orchard Queen Mill. Write for it.

Puffer-Hubbard Mfg. Co.  
2206 East 29th St. Minneapolis, Minn.

Save all the crop with

#### Stafford's Perfect Fruit Picker

A device to pick fruit from inaccessible parts of the tree without the use of ladders, and without bruising the fruit or the loss of its stem.

Use any pole desired, preferably the bamboo spraying rod. Attach the tool to any position desired by the strap, or clamp. Attach the chute to the bottom of the canvas funnel, and the lower end to the operator's picking bag suspended from the shoulders. Reach the fruit desired, inserting it within the mouth of the picker, and draw it into the cone hook, then with a twitch of the pole the fruit is detached and drops through the funnel into the bag.

Enables the picker to grasp the fruit with a velvety grip as by hand. All danger of mashing caused either by bruising or the loss of the stem is avoided.

Designed to use either with apples, pears or peaches.

Prices and further information freely given.

C. A. STAFFORD  
Altoona, Kan.

#### Commercial Blueberry Possible

“WHY not the native blueberry?” asks Director Sidney B. Haskell of the Massachusetts Experiment Station, in a paper pointing to the recent progress made experimentally in improving wild varieties.

The blueberry is wonderfully well suited to our soils, the director writes. “These soils are acid. It has been estimated that to bring our land to what chemists call a neutral or sweet condition will require an expenditure of approximately \$9,000,000 and an annual additional expenditure of \$2,225,000 to keep our soils in that condition, which is essential to the profitable culture of most farm crops. But in the blueberry we have a potential farm crop that thrives on acid soils and never grows to perfection on land over-rich in lime. Therefore why not put some of our lands into profitable blueberry culture?”

The reason the blueberry has not been brought into culture long before, thinks Director Haskell, is that until recently people did not know how to propagate it, how to prune, fertilize, spray and otherwise handle this na-

tive bush crop in the manner of domestic farm fruits.

The director is plainly partial to blueberries. “Of all the wild fruits native to New England, none excels the blueberry, in its particular season,” he declares. “Yet it is almost the only important native fruit which had not been brought into culture in a large way. Selected varieties developed experimentally show superb quality,” he says, “and are very large. In some cases clusters are as large as a man's fist” . . . referring to berries grown on the Cranberry station at Wareham. The cost of harvesting cultivated blueberries is as much less than the expense of the slow process of picking wild huckleberries as is the cost of handling the cultivated strawberries below that of picking the tiny red morsels that grow by the side of country roads.

But let the director tell it.

“Everything indicates,” he asserts, “that Massachusetts is about ready to establish a commercial blueberry-growing industry. A part of it doubtless will be located on the low sandy areas adjacent to some of our cranberry bogs, and more of it on the upland pastures all over the state.

Blueberries can be eaten fresh. They can be canned. There is apparently no limit to the market which might be developed for this succulent fruit. The harvesting season comes when farm work is not pressing. The lands to which blueberries are best adapted are often too rough and too acid to be more than moderately adapted to the growth of other crops.

The Massachusetts Agricultural Experiment Station has a small blueberry plantation operated in connection with the Cranberry Station at Wareham. One of the most striking things on this plantation are two rows of blueberries, one with the plants transplanted from the wild, just as they happened to come; the other transplanted with definite intention of getting the better bushes.

This comparison illustrates in the most striking way the possibilities of blueberries' culture. It shows for one thing that all blueberries are not blue—some are black—yet all are true blueberries. The black blueberries are usually small, commonly earlier than the blue blueberries, rather unproductive, and of rather low table quality; although some of them are very sweet but small in size.

“And then there are all sorts of sizes and shapes and flavors of the blue blueberry. Some kinds are unproductive; others are quite otherwise. Some plants ripen early; others very late. On some plants the berries ripen together so that the harvesting may be done very cheaply; on others individual berries ripen here and there so that at no one time can the crop be harvested. All of these types put together show the necessity of careful selection in order to make commercial berry culture profitable.

But on this experimental plantation there is more to be seen than these two comparative rows. Several years ago, Mr. Frederick Coville of the United States Department of Agriculture found out how to propagate blueberries and developed a number of selected varieties. Through the co-operation of the Bureau of Plant Industry of the United States Department of Agriculture some of the better of these varieties have been sent to the Cranberry Station for trial.

The difference between the selected berries and these artificially produced varieties is even greater than between the selected and unselected rows of wild berries. The new varieties are very large. In some cases the clusters of berries are as large as a man's fist. Individual berries nearly half an inch through are common, and larger berries by no means uncommon. The quality of these berries is superb, their attractiveness when prepared for the table unexcelled. The difference in cost of harvesting berries as they occur in their native wild condition and of harvesting these “tame” varieties will be as great as the difference between harvesting wild strawberries and cultivated strawberries from the garden.

**Here It Is**

1/2 BUSHEL "TUBARREL"

**The New Container  
For Apples**

And other fruits or vegetables packed in barrels. More substantial than an ordinary apple barrel cut in half. Ring packing of the face very easily done, and affords an excellent display of the contents. Just the thing for high grade apples, and as it is adapted for use with regular barrel packing machinery, no special equipment or packers are needed. No cooperation is required, as "Tubarrels" are made up at the factory and shipped nested like berry boxes.

Use them this year.

Price 30c each  
F. O. B. Thebes, Ill.**J.D. Hollingshead Co.**208 S. La Salle St.  
Chicago, Ill.

**IMP SOAP SPRAY**  
*Sure Insect Killer*

IMP Soap Spray is a scientifically prepared compound that is destructive to insects without injuring plants or roots. Does not spot leaves, fruit, grass or deface paint work. May be used on fruit trees; shade trees; flowering shrubs; vines; garden truck; and on all sorts of plants, both inside glass and out of doors. It is most effective against rose bug; gall bug; white, black, green and thiodonid fly; red spider; tripe; aphid; fruit pests; sun beetle and moths. Very economical, one gallon is mixed with 25 to 40 gallons of water. Full directions on each can. Order direct if your dealer cannot supply.

Pint can.....	\$ .50
Quart can.....	.75
Gallon can.....	2.25
5 Gallon can.....	10.00
10 ".....	18.00

F. E. ATTEAUX & CO., Inc.  
176 Purchase St., BOSTON, MASS.

**NO JOKE TO BE DEAF**

Every Deaf Person Knows That  
Imake myself hear after being deaf for 20 years, with  
these Artificial Ear Drums. I  
Wear them day and night.  
They are perfectly comfortable.  
No one sees them. Write  
me and I will tell you a true  
story, how I got deaf and how  
I make you hear. Address  
Geo. F. Way, Artificial Ear Drum Co., Inc.  
50 Adelaide St., Detroit, Mich.

**Rotting in Transit**

(Continued from page 16)

der refrigeration arriving here on the ninth day over 50 per cent of the peaches were rotten. This was covering the same period, as one was shipped on the 5th of July and one shipped on the 6th of July."

Several other shipments of peaches were made, in which the fruit had been dipped in "Sulfocide" after being picked from the trees, and the results after shipment and standing in a warm office for several days, were very similar to those in which the fruit had been sprayed with "Sulfocide" previous to picking. Dipping peaches after picking is not only impractical, but unnecessarily bruises the fruit, while spraying is both practical and economical.

"A 200-gallon tank of spray will cost from \$1.50 to \$2, 1c less per gallon, and should spray 200 good sized peach trees, or 1c or less per tree, so outside of labor, the cost is little or nothing, and peaches thus sprayed should remain in a salable condition from five days to a week longer than unsprayed fruit. A 4 oz. bottle of "Sulfocide" is sufficient for 6 gallons of spray; a pint, 25 gallons; and a quart, 50 gallons, with the addition of the required amount of soap.

The season is late, but we will be pleased to send either of the above amounts by mail, free, to anyone willing or able to make some experiments and report results to us, at 50 Church St., New York City. Spray one tree just before picking, allowing time for the spray to dry. Pick 4-quart basket of sprayed and another of unsprayed fruit as near alike in ripeness as possible and put on a shelf and watch developments. Make a record on the basket of the time picked and when and how rot appears."

**Improved Packing  
Houses**

(Continued from page 4)

houses, the choice of materials being determined by the cost and the fire risk. As the packing and storage rooms are usually parts of the same building, the same material is ordinarily used in its construction, although the storage room is insulated, and the packing room is not.

The most important feature in the construction of the packing house, but the most commonly neglected, is the arrangement for proper lighting. The most efficient work is possible only when the room is properly illuminated at all times. Most people understand that dim lighting interferes with the accuracy and efficiency of grading operations, but comparatively few realize that the glare of a direct light is equally bad. Hipped-roof skylights and high windows in sufficient numbers to light the interior thoroughly are the most satisfactory methods of lighting. The hipped-roof skylight is preferable to a straight, plain glass, as the style of construction permits it to receive light throughout the day.

The successful coordination of the many different operations involved in packing northwestern boxed apples requires in each case a study of local conditions. It is impossible to lay down certain principles which should be followed always; but where it is necessary to determine precisely what style of construction or type of equipment is best suited to the particular needs each packing house becomes a separate problem. Those who contemplate the construction of new houses or desire to improve their equipment and methods of operation may secure copies of the bulletin and additional information upon application to the United States Department of Agriculture, Washington, D. C.

Women are determining factors in production, because they direct the consumption of 85 per cent of the wealth of the country.

**GOOD YEAR**

Copyright 1921, by The Goodyear Tire &amp; Rubber Co.

**A Real Bargain for Owners  
of Small Cars**

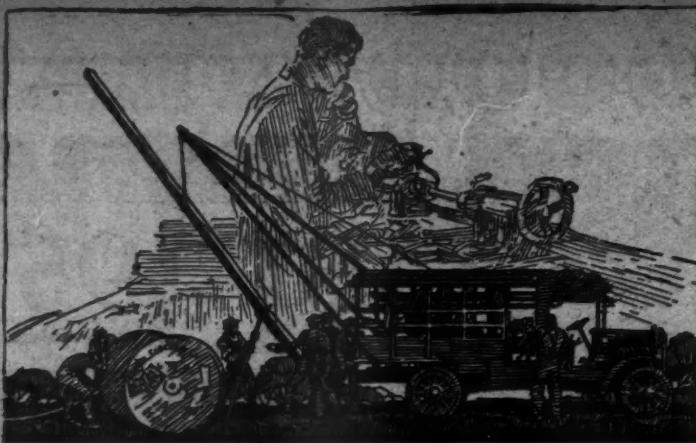
In the past five years nearly 5,000,000 of these popular 30x3½-inch Goodyear non-skid tires have gone into service. More than a million of them are in use today.

Now you can buy these tires, of big size, strong construction, and long-wearing treads, at the same price you are asked to pay for unknown brands.

Why take a chance on unknown tires, when you can get Goodyear quality at as low a price?

See your Goodyear Service Station Dealer today.

THE GOODYEAR TIRE & RUBBER COMPANY  
Offices Throughout the World



## Tools of Industry

In industry, art, science, in fact in all kinds of work, good results require good implements kept in good condition.

If the right sort of implement is important to an individual workman, efficient tools for industry and commerce are a vital necessity to the nation.

Telephone service is one of the tools of American industry and commerce in most common use and upon which much depends. The American public cannot afford to let this tool get dull.

To provide over twelve million subscribers with telephone connection; to transmit the vibrations of the human voice thirty million times a day and from any point to any other point throughout the land, demands an expensive mechanism of the highest order of scientific precision, and an efficient organization.

It is the aim of the Bell Telephone System, with the cooperation of the public, to be the most dependable tool of American industry.

**BELL SYSTEM**

AMERICAN TELEPHONE AND TELEGRAPH COMPANY  
AND ASSOCIATED COMPANIES

One Policy, One System, Universal Service, and all directed  
toward Better Services



**Buy a pipe—and some P. A.  
Get the joy that's due you!**

We print it right here that if you don't know the "feel" and the friendship of a joy'us Jimmy pipe —GO GET ONE! And—get some Prince Albert and bang a howdy, do on the big smoke-gong!

For Prince Albert's quality— flavor—coolness—fragrance—is in a class of its own! You never tasted such tobacco! Why—figure out what it alone means to your tongue and temper when we tell you that Prince Albert can't bite, can't parch! Our exclusive patented process fixes that!

Prince Albert is a revelation in a makin's cigarette! It rolls easily and stays put because it's crimp cut! Oh, go on! Get the papers or a pipe—and some P. A.!



**PRINCE ALBERT**

The national  
joy  
smoke

## Pasteurization Preserves Sweet Cider or Grape Juice

SWEET cider or grape juice can be preserved in a sweet condition indefinitely if the directions furnished by specialists in the Bureau of Plant Industry, United States Department of Agriculture, are carefully followed.

As rapidly as the juices are pressed from the fruit place them in clear vessels. Wooden barrels or tubs which have previously been thoroughly scalded will serve the purpose very well, although earthenware jars, if available, should be used. These are allowed to stand over night, or for not more than 12 to 14 hours, in the coolest location possible so that much of the solid matter suspended in the juice will settle to the bottom. Glass jars or bottles must be thoroughly sterilized to receive the juices, which are drained off without disturbing the sediment.

If fruit jars are used they should be fitted with sterilized caps and rubbers, and the cap tightened down as far as it can be turned. If bottles using crown caps are used, the bottles are capped as they are filled, using caps which have been sterilized. In case bottles closed with corks are used, set the previously sterilized

corks in place in the bottles and tie them down loosely with strong cord so that steam may escape. To relieve the pressure during sterilization the bottles should be filled only to the neck.

A wash boiler or other convenient vessel can be prepared for a "water bath" by fitting it with a wooden rack on which the containers filled as above indicated with juice are placed. The bath is filled with cold water and the bottles or jars, if closed, are inverted or laid on one side so as to wet the inside of the caps thoroughly with juice. If bottles closed with corks are used, the bottles must stand upright in the water, which should come up to the necks of the bottles.

The heating is then started. A thermometer is hung so that it will dip for half its length into the water, which is heated gradually until its temperature reaches 175 degrees F. Allow the bottles or jars to remain in the water for 30 minutes if quart or half gallon jars are used, and from 40 to 45 minutes if gallon bottles are used. Then remove from the stove and immediately tighten down the caps of the jars, if jars are used. If corked bottles are used, drive the corks

firmly into the necks; invert each bottle so as to wet the cork thoroughly with the hot juice; then complete the sealing by cutting the cork off smoothly and pouring hot paraffin over it.

Place the product in a dark, cool storage room. Watch it for a period of a week or more for the beginning of fermentation, which will be indicated by frothing at the surface of the liquid. If any bottles show signs of fermenting, return them to the wash boiler and repeat the process exactly as before, loosening the tops, of course, before heating begins, and closing down firmly again before the liquid is allowed to cool.

When the juice is placed in storage the suspended solid matter will gradually settle out and sediment will accumulate in the bottom and on the sides of the jars. In the course of two or three months at ordinary temperatures, this settling will be completed and the liquid will be fairly clear. It may be used directly from the bottles or drawn off into clean bottles which should be sterilized before they are filled and which should then be corked and pasteurized by heating to 170 degrees F. for the same length of time

as in the first pasteurization. If re-bottling is necessary or desirable the second heating should never reach the temperature to which the juice was first heated; otherwise, the clarification which is secured by settling and decanting into new containers will be defeated, as a second process of sedimentation will occur. If the temperature be kept 5 degrees below that reached at the first heating, this result will be avoided.

A reliable thermometer is a necessity for this work, as it is important that the juice be heated to 175 degrees F. in the first heating, in order to destroy the organisms which would otherwise cause fermentation. It is equally important that the juice should not be overheated, as this will give it a cooked taste which is decidedly unpleasant to many people.

California olive growers want a tariff of 60c a gallon on olive oil in bulk, and a proportionately higher rate on oil in containers.

An office building and factory costing \$300,000 is being erected in Los Angeles by the California Walnut Growers' Association.

# The Orchard Home

## A Section for Orchard Women and the Children Edited by Mary Lee Adams

### A Priceless Machine

WHEN you buy an automobile, you are supplied with a small book of instructions and, if you value the machine, you follow directions as to care and operation. When the engine indulges in the whims peculiar to motors, you do not keep on driving in the hope that the trouble may correct itself. You try to locate it and, if it be within the scope of your knowledge and ability, you correct it.

When you hear a rattle, rattle, rattle, you know that a screw is loose. Adjust it and all is well, but if you say "Oh well, so long as we can keep going why worry?" something eventually falls off. If the engine boils, you slow down until it cools off. But in serious trouble the wise amateur forbears to tinker, and takes the car to the nearest reliable garage.

Yet when it comes to the infinitely more complex and valuable mechanism of the human body it is often neglected and ignored and allowed to run down more carelessly than a mere machine which can be replaced. When the body breaks down you can't buy a new one for love or money. The best you can hope for is that a doctor may patch it up so that it works about as well as ever for a while.

Surely this wonderful body of ours merits the best attention and care. Everyone should know something of its workings so that minor ills may be avoided or corrected by oneself and (just as with any other machine) serious symptoms should be referred at once to a professional. But many persons drive the poor body relentlessly, and even when the pace is too swift, they fail to stop and let it rest. So long as we can make it go, why worry? On and on we drive until, quite suddenly sometimes, the motor gasps and runs no farther.

### Prevention Better than Cure

A N ELOQUENT plea for children is made by the Kindergarten Association of New York. It holds the theory that the greatest safeguard against ignorance, inefficiency and crime is the proper training of the little ones from their earliest years. Our criminals and paupers are largely recruited from the class that has not had the benefit of early training.

The waste of money incurred by lavishing care upon such unfortunates after, instead of before evil traits have become fixed upon them, is shown in the fact that we spend approximately \$3,500,000 per day (can you realize it?) upon our criminal classes, while at the same time large numbers of children are left to their own devices during the formative and impressionable years when ideals of conduct are adopted and habits

established. Just think what could be done for children with the \$1,247,500,000 now spent yearly in corrective, rather than in constructive and preventive measures.

At least one public kindergarten for every public school should be the ideal of all who have the best interests of children and of the state at heart. But legislation must be worked for patiently and comes slowly. Meantime every mother has it in her power to supply her own children with many of the benefits of the kindergarten even if none is within reach. If her interest be broad enough to include all of the children in the neighborhood, she may secure valuable cooperation in establishing a kindergarten for them by writing to the National Kindergarten Association, 8 W. 40th St., New York City, and telling them what she wishes to accomplish.

### Next? School of Matrimony

D OES a judge ever read the divorce cases in the daily papers? One imagines him surfeited with the unsavory fare dished up for the public since he cannot avoid having it served to him in the courts. One such judge, H. A. Lewis of the Superior Court of Illinois, instead of becoming hardened, as many might in his position, feels the human tragedy underlying the crisis that brings two persons who once set out so confidently to weather the storms of life together, to the point where their most passionate longing is to be henceforth and forever apart.

This is the reasonable interpretation of his seeking and suggesting a remedy for the matrimonial disasters that pass all too constantly before him. He is not tinged with the cynicism of those who surmise that most of these unhappy ones have entered into marriage without the proper feeling for each other and are therefore "only getting what's coming to them," but he is convinced that marriage is too often made without understanding or appreciation of the obligations that matrimony imposes upon men and women. These obligations being ignorantly assumed, the result is naturally unsatisfactory.

The kindly Judge thinks that a school of matrimony might well be made part of the regular school course. Whether this would be desirable or feasible, is open to discussion. It is safe to predict that it will be long before such courses are given in the public schools. But right now boys and girls can be taught in the home to form a correct conception of the loyalty, co-operation and mutual forbearance required of the parties to a successful marriage. And to parents who wish to teach their children "how to be happy though married," it may

be whispered that while precept is good example is better.

### Handy Money for Travelers

F ARM families used to pass their lives fairly rooted to the soil. Now they go gadding about just like city folk. On vacations, to farmers' meetings; for health, pleasure or business they are constantly traveling. At this season most fruit farmers and their wives are planning to attend their State Horticultural meeting; not a few are thinking of a holiday in Florida or California; some are going abroad.

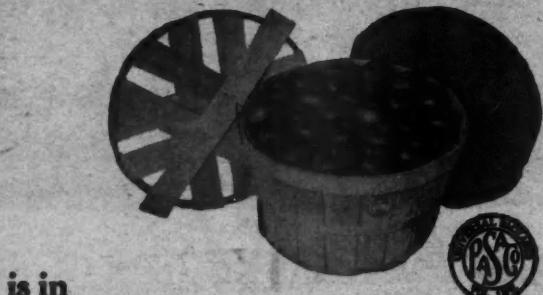
How shall they finance these trips most safely and conveniently? To travel with cash in hand is a nuisance and a risk. Ordinary bank checks present the difficulty of identification. A bank must know positively who's who, and unless you can prove that you're you, it may be difficult to secure means even for food and lodging. To persons accustomed to living among neighbors who know them as well as they know themselves, it is upsetting to find it impossible to prove identity. Under the cold, accusing eye of the paying teller, dire misgivings arise and a confusion that almost reduces you to wondering whether you are really the person you have always believed yourself to be.

All embarrassment can be avoided by laying in a supply of traveler's checks before starting on the trip. They are issued by express and banks, and can be purchased from them or from almost any bank. And listen Lady! if you are traveling with your husband, better take along some of those checks that call for your individual signature. Circumstances may cause unexpected separations. Husbands sometimes get tied up with business just when wives feel an irresistible call to go shopping. Indeed this coincidence is surprisingly frequent after honeymoon days.

The woman with traveler's checks, is quite independent. They can be used as currency where one is unknown. Being signed once at the time of purchase, the second signature is sufficient identification at any large hotel or store, at railway stations, along motor routes, etc. In smaller places a visit to the bank procures whatever amount of cash is called for by your travelers' check.

They come in convenient denominations from \$10 to \$200 and are very unpopular with thieves as they must be countersigned in the presence of the person cashing the check. They are as good in foreign countries as in our own, and are issued in the United States in denominations of French and English money. If lost "through theft, fire or negligence" a prompt notification and the signing of a certain form insures the refund of your money.

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## The Luck of the Irish

By HAROLD MacGRATH

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### SYNOPSIS

In the plumbing shop of Burns, Dolan & Co., worked the Irish journeyman, William Grogan, whose view from the window of the shop was upon the sidewalk where he looked upon the ever-changing panorama of passing boats and shoes. William was somewhat of a dreamer, and to him the step of each passer-by was a wonderful story, whose plot was ever in embryo. But one pair of shoes in particular became of peculiar interest. They were feminine, and passed regularly at eight o'clock in the morning and four in the afternoon except on Saturday and Sunday. For three years he had watched them. William read a good deal and longed to see foreign lands, but always considered such a thing far beyond his means, as he saved his money in hopes that some day he might have a shop of his own. One day he received a letter from a law firm asking him to call. It developed that William had been left a large sum of money by an uncle who had just died. To suddenly come into possession of great wealth bewildered William, but he decided to use most of the money in buying an interest in the plumbing establishment where he worked, and to use the rest of it in gratifying his wish to see the world. After discussing with Mr. Burns the purchase of an interest in the business and buying a steamer ticket, William had a lively encounter at the doorway of a restaurant with a well-groomed man and an attractively-dressed woman. This installment finds him aboard the vessel for his foreign tour. On reaching Spain, William finds himself deeply in love with Miss Jones, the school teacher. He also discovers, from the fly leaf of her book, that her real name is Ruth Warren.

self up a few feet by hauling at the rail, then he would rest for a moment. William eyed him callously. It was some one who was going to have a fine headache in the morning. As the straggler came under the cluster of lights, he steadied himself as if marshaling what remained of his forces. "Hello, Camden!"

"Want a pilot?" asked William, sensing that the man was deep in liquor.

"Fine! Pilot's the thing I need. Lo's of rocks in the channel, and I've los' m' chart."

"I guess I'd better steer you down to your bunk, my lord. Some little load. Where'd you collect it?"

"Rome and her seven hills. Got to go to China. Boss wants some queues. Ha, ha! That's good! Boss wants some queues!"

William maneuvered him into the cabin and turned on the lights. Without troubling himself to undress, Camden flung himself into the bunk.

William took an old envelope from his pocket and tore off the back. Upon the clean side he scribbled: "Keep your cabin until you sober up—Grogan." He laid this in the middle of the floor, put out the lights, and went out, closing the door softly.

He did not see Camden again until the Ajax dropped anchor in the basin at Piraeus. In Athens the man turned up perfectly normal except for a pallor which added to his manner a touch of scholarly meditation. Such recuperation was a clear sign to William that Camden's constitution was a tough one. Camden totally ignored the episode.

Upon his return to Cairo William found a draft from Burns and a letter bristling with questions and warnings. Another letter informed him that his stolen letter of credit had not yet been offered anywhere, and that a new one would be issued not later than November 10th and forwarded to any city he should designate. Upon the advice of the agent at Cook's, he directed the bankers to forward the new letter to Rangoon. A hundred pounds ought easily to carry him to that city. This important business off his mind, he proceeded to enjoy himself with a thoroughness which generally left the girl breathless. It seemed to her that he did not know what fatigue was.

The night previous to the departure for Port Said, where they were to go aboard the Ajax, Camden invited William to go to the Theatre des Nouveautés, where three or four good boxing-bouts were to be held. William threw up his hat. After ten thousand painted saints, and as many cathedrals and tombs, this prospective entertainment was manna in the desert.

But, with the exception of five sovereigns to meet the expenses of the evening, he wisely turned over his money to Ruth; and, ironical as it may seem, this very caution was the cause of his downfall.

"Don't go prowling around after your boxing-match is over," she advised. "This is the last night, and if anything happened to you you would miss the boat."

"I'll never miss it, sister; take me from me."

Camden announced, as they entered the theater, that after the bouts William would have to shift for himself. "I'm off for a rubber or two of bridge at Shepheard's; so you'll have to guide yourself back to the hotel. And remember the boat."

"I know the way," replied William.

William knew the return route to his hotel. But he who hesitates is lost, and on the way back William hesitated against his better judgment.

A man had followed him from the theater, and when William became detached from the crowd, the man approached him secretly.

"Would the American gentleman like to see the celebrated Cairene dancers?"

"Not at all," said William.

"Ah, but you do not see Cairo if you miss these dancers. If you have not been to Madame René's, you have not seen Cairo, sir."

He recalled that only this very night Camden had spoken in regret of his inability to see some of the Cairene dancers this trip. William was out to see the world, and a Cairene dance-hall might as well take its place on the program in exchange for some future tomb or ruin.

"Lay on, Macduff; but I tell you what if these dancers aren't up to the mark I'll sic Thomas Cook on to you."

He was not very much impressed by the scene at madame's. It was sordid, and William did not like sordid pictures. The dancing girls were even less graceful than those ladies in Naples who danced the tarantella in the drawing-rooms of the hotels.

To reach Madame René's door you had to pass down a dark alley whose

single illumination came from a wall lamp at the corner. It was in this that William was struck down.

The unmarried woman must have something to satisfy her instincts of motherhood; thus we find the spinster coddling the cat or cooing to the marmoset. A single man has so many diversions that he need be lonely only during his meals, and not always then. He has no mother instincts; he cannot boast of father instincts before the fact.

Ruth, having finished her breakfast of toast and chocolate, sat cross-legged among the tumbled bedclothes and analyzed an astonishing discovery. She had found an outlet to the mother instinct by establishing a protectorate over William Grogan. Since the death of her father she had been without any practical objective in life. She loved children, but it was impossible to mother the wild little animals under her tutelage.

So she awoke with the discovery that for several weeks, in fact since the landing at Naples, she had been mothering William Grogan, rescuing him from greedy shopkeepers, suppressing his carelessness in the matter of tips, seeing to it that he never left anything on trains, warning him against sea-food in inland towns, teaching him by degrees what she knew of art and literature despite the fact that most of it went into one ear and out of the other.

Mothering William Grogan with his shock of red hair, his amazing blue eyes, his irrepressible good humor, his irresponsible generosity! She laughed and rocked her body. It was so funny. Arguing with him what he should and should not spend, ordering him to do this or that, certain that he would always obey her, which he always did.

Arguing with him what he should and should not spend, ordering him to do this or that, certain that he would always obey her, which he always did. Annoyed as she was to realize that it fell to her easily to dominate this Hercules who was only a child grown up. It never occurred to her to peer behind the curtain of this apparent docility. Besides, the experience had all the thrilling exhilaration of stroking a purring tiger; for while the night in time completely forgot that morning in Venice, she would never forget the cold, murderous fire in William's eyes.

Night o'clock! She sprang off the bed, lively and eager. They would be leaving for Port Said at nine-thirty, and she hadn't a bit of packing done. It was an actual fact that these cases were visibly shrinking or else her clothes were growing. Soon she would be forced to buy a third case.

At eight-thirty she was in the lobby, searching for William. He was nowhere in sight, and she considered this rather unusual. So she found a chair in the midst of the confusion and sat down to wait. Her fellow-tourists began to depart in groups. Ten minutes to nine she became worried. Not belonging to that class of women who cannot do anything but wait, she went to the desk to learn if William had left word. He had not.

"Perhaps he has overslept," she suggested.

The clerk looked over the key-rack. "Here is his key, miss."

She thought for a moment. "It might be well to send some one up, at least to see if his luggage has been brought down. It is getting late."

"Very well, miss."

Five minutes later Ruth was informed that Mr. Grogan had not been in his room. His clothes lay about; nothing had been packed. Ruth was now alarmed.

"Give me the key and summon a maid for me," she said resolutely. She did not care what people said.

She and the maid packed William's trunks and carried them down-stairs. It was now ten minutes past nine. Each time she shut her eyes she saw a man stealing treacherously up behind him.

At nine-fifteen she was forced to go to her carriage. She dared not wait any longer. There was a possible chance of his arriving at the station the last moment. But there was no William Grogan on the train that left for Port Said that morning.

Her luggage and William's were stacked together in the corridor; and the Calcutta missioner eyed the pyramidal gloomily as he passed the compartment.

At Port Said there was no telegram awaiting Ruth.

Camden was one of the last to come on board. Ruth rushed up to him.

"Where is Mr. Grogan?"

"Grogan? Why, isn't he on board?"

"No. He didn't come back to the hotel last night."

"Good Lord! Why, I left him at the door of the theater. Only a few turns, and he was at his hotel. But I shouldn't worry, Miss Jones." For Ruth was still "Miss Jones" to everyone but William. "I say, I'll run down and send some wires, one to the police and one to the hotel. He may not think to take the night express to Cairo."

"I'll be very grateful to you. I'm dreadfully worried. He hasn't the last idea what caution is."

"We've half an hour. I'll bring you the receipts for the telegrams." Camden made off.

When the Ajax began her slow voyage down the narrow canal, Ruth stood watch until Port Said became an indistinct blur to the north. At midnight

she saw the lights of Ismailia approach and pass. The captain, having been apprised of the situation, watched for a signal "passenger to board"; but none came. It was then Ruth went below, but not to sleep, merely to rest her weary body.

At dawn the slithering of the anchor chains startled her from a doze. She hastily put on her kimono and went on deck. Suez lay off to starboard. The harbor lights were still shining, though they grew perceptibly dimmer and dimmer as the yellow pallor of dawn changed swiftly into bright gold. A string of coal-lighters were swinging around to port, and hundreds of Arabs swarmed over the dull black heaps of coal. There was in the air the promise of a very hot day.

The Ajax had dropped her anchor just outside the basin of Port Ibrahim. In the basin itself was a forest of masts and funnels; and from out the spaces between these hulls came dozens of small boats laden with fruit. Ruth strained her eyes in vain to discover a familiar head.

One of her hands lay inertly on the rail. Down upon this hand suddenly fell another, big and warm and firm. It was dirty, variously scratched and streaked with blood. She looked up swiftly. The object of her fascinated gaze was literally in tatters. His collar was gone, likewise his hat. There was a hideous bump over the left ear, and all the way down the side of the head and neck was a broad streak of coagulated blood and coagulant. The face was as black as a stoker's. Out of this muck appeared two rows of white teeth. She would have known that grin anywhere.

"William Grogan!" she gasped.

"Ye-ah; what's left," jauntily.

WILLIAM never saw the hand that struck him down. As he left Madame Rene's dance-hall, so far as he could see the alley was deserted except for himself. Still, there were a dozen black doorways behind him and beyond. The last thing he remembered, he had taken out his old silver watch, not with any idea of ascertaining the time, but rather in surrender to that mechanical impulse common enough in men—when in doubt, look at your watch. Right there the top of heaven fell out.

Hours must have passed before he finally opened his eyes and sensed realities. The blow had been brutal, and doubtless would have permanently cracked a skull less solid. He attempted to reach up a hand to this fresh head, only to learn that he was bound up as snugly as an Italian baby in the winter.

Too weak to struggle, he relaxed and lay back like a sensible but badly punished boxer between rounds. In time the vertigo passed away and slowly his body became normal. But he wisely allowed an hour or more to slip by before he began a serious attempt to free himself.

The damp, musty odor was familiar. He was in some kind of a cellar. A long distance away he was presently able to distinguish a square of dark blue in the jet black. It was a window. He was sitting with his back to a post of stone; he could feel the chill of it against his spine. And the damp of the clay floor penetrated his legs and thighs. After what seemed hours and hours, the square of blue lightened and the velvet blackness took on a deep, foggy gray. Morning was approaching.

He now began to struggle. He would swell his muscles, then relax them suddenly, recalling the skill in this direction of a prestidigitator he had once seen at the vaudeville. By the time the outside world had turned yellow he had gained an inch or so at the wrists; but, in opposition to this, the rope had tightened around his elbows.

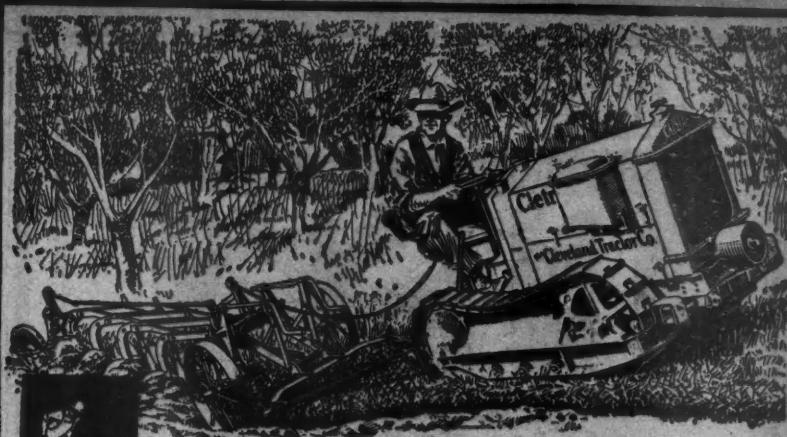
He had lost considerable blood. His left shoulder was damp and soggy with it, and whenever he moved his head his neck burned and the hair pulled. He was grateful for one thing—they had not gagged him; he could get plenty of air into his lungs. But this fact added a new worry to those already accumulated—his captors did not care whether he yelled for help or not. He was dreadfully thirsty. He would have exchanged all his sovereigns for a dipper of cold water.

By the time it was full morning he could pull one foot up as far as his knee, but beyond that not an inch, nor could he free the foot. The rogues had made a very good job of it.

He had promised Ruth faithfully to return to the hotel as soon as the fights were over. He had broken his promise; and she was all alone. He began hiccoughing, as much in rage as in pain.

Far above a door closed carelessly, William raised his head, listening tensely and trying to strangle the hiccoughs. But the sound of footsteps did not follow the banging of the door. It might have been the wind. Yet, even as he was about to accept this as a solution, the door leading into the cellar swung on its stiff hinges and a small Arab boy came down the stone steps. He wore a kind of smock, ragged and dirty; his legs and feet were bare, and probably had been since the hour of his birth.

(TO BE CONTINUED)



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## Plant Roses in Autumn

By Mary Lee Adams

**T**HE rose is the undisputed queen of flowers. Violets are the favorites of some, dahlias, chrysanthemums, peonies or pansies of others, but the rose continues to reign supreme. From the wee wild rose to the most gorgeous hot-house specimen, each one carries a potent charm. No garden is complete without them and no gardener is satisfied until they are represented in his or her own flower domain.

### Has the Rose a Fault?

It takes courage to remark, at least publicly, on any defect in so delightful a creation but, coming right down to facts, is a rose garden always pretty? The blossoms are beautiful to be sure, but the foliage is not as a rule distinguished in form, texture or color, and the bushes in most gardens are somewhat straggling in growth and lack decorative quality. For this reason there is a tendency to set the rose beds a little apart from the ornamental garden where harmonious effects are the first consideration.

As if to make up for this deficiency in bush roses, the ramblers, climbing and running roses are most graceful in their habit of growth. Their individual blossoms are apt to be less superb, but the effect as a whole is enchanting. For pergolas, porches, arbors, on rough ledges, as hedges, and along division fences, they are a pure joy to the eye.

The rose bush being difficult to treat as ornament has caused much thought to be expended upon the problem it presents. In gardens cared for by professional hired gardeners, standard roses, clipped in trim array on formal terraces, take their place well in a decorative scheme. Aside from these, the bush roses of the ordinary garden make the irresistible appeal of a beautiful but as yet undeveloped girl, in whom we gladly overlook the meagreness of form because of her surpassing loveliness of face.

### We Want Roses

What keener pleasure is there for the amateur gardener than the daily stroll among the blooming roses? How eagerly the unfolding of each bud is watched, how deeply the delicious fragrance is inhaled, how callously the clawing rose chafer is shaken off into the vessel partly filled with kerosene. Is there a more beguiling pastime than going up and down the rose bed, delicately lifting the head of flower after flower and vainly comparing the incomparable in the bewildered rapture of Browning's lover over his lady's hair. "Holds earth aught like this tress, see and this tress, and this the fairest tress of all—so fair, see, ere I let it fall."

It is good to know that sometimes it is best for the rose bush to cut the bloom, and that it is a service to the plant if one yields to the longing to place its blossoms in a vase where they may illumine and perfume the home. One sighs to see the flowers shatter even before they are withered, yet "each silken petal that has fluttered low, flashed ere it fell a smile from God." Very exquisite creations are oftentimes not awarded length of days.

If one be greatly infatuated and a fairly skillful photographer, much of the loveliness of the flower may be perpetuated by the camera. It is but a poor exchange for the living loveliness, as pictures of people or places dear to us must always be, still the rose, most difficult of subjects for the painter, makes a wonderful photograph.

A famous artist was used to deride his pupils when he found them floundering in an effort to depict roses. "Oh ho!" he would chuckle, "so our ambition is limitless. Roses, Niagara Falls, the Rocky Mountains!" whereas the luckless dauber would feel and look foolish, but truth to tell no more

foolish than the canvas on which the flower was travestied. Yet on account of their exquisite form and texture, roses are ideal subjects for expert photography.

### Roses All Over the World

The rose has its preferences. Portland, Ore., where they are said to raise chiefly roses and umbrellas, is a perfect rose paradise. In that moist atmosphere they grow like weeds. In June you may see block after block of city streets bordered with roses leaning their pretty faces over the pavement quite unprotected from the covetous passer by. There they stand with great glowing blossoms big as dinner plates and delicate as moonshine. Hundreds of miles farther south, in Pasadena, California, the great rose carnival is held at New Year. Tons of roses decorate the floats or whirl through the air in the battle of the roses.

The national flower of England is the rose. Her civil wars in the days of chivalry were dubbed the "Wars of the Roses" because the opposing forces adopted the white and red rose respectively as their emblems. In the far Vale of Kashmir, the wondrous perfume, attar-of-rose, was first extracted from the blossoms of the sultan's gardens by that enchanting lady Nourjehan, a brilliant and commanding woman who might well resent her treatment at the hands of Tom Moore, who has featured her in his poem "Lallah Rookh" as the lovely but somewhat insipid Nourmahal. Small wonder that this concentrated essence is so costly since it takes one and one-half tons of fresh plucked rose leaves to make one pound of attar.

There is a National Rose Test Garden at Arlington, Va. A single issue of the American Rose Annual deals with roses of France, Italy, England, Australia and Canada. So we see that the range of the rose is wide. East, west, north and south, people everywhere have felt that they must have roses. They cannot get on without them. Not all varieties thrive in every place, but so much science has been applied to their selection and hardy development, that by careful choice one may find a satisfactory number that will be suited to the desired locality.

### Plant Roses Now

It is the climbing roses and ramblers that give the greater glory to the garden, while it is the rose trees, bushes and standards, that furnish, as a rule, the more perfect blossoms. You are sure to want roses next summer. If you already have many, you will wish for more, and you will long for them to blossom as early as may be. Call on your nearest reliable nurseryman for advice as to fall-planting of roses. Ask for his help in selecting the varieties most suitable to your location, to your individual preferences and to the general planting plan already established.

Not only can roses be planted in the fall, but the autumn bloom of roses is often a delightful surprise to the recently initiated gardener who has associated roses exclusively with summer. Not a few places hold their rose exhibit in the autumn in the belief that the finest specimens are developed at that season. A famous rose grower and manufacturer of insecticides says that he has seen roses in bloom in his garden in the latitude of New Jersey, after a light snow had fallen.

### Work Your Own Garden

Never envy those who live where you imagine that roses can be grown without trouble. In almost every place it means work and care to bring them to perfection, but on the other hand there are varieties that do extraordinarily well under an amazing amount of neglect.



3655—A Pretty Summer Frock.

This is cut in six sizes: 24, 26, 28, 40, 42 and 44 inches, bust measure. A 28-inch size will require 5½ yards of 40-inch material. The width of the skirt at the foot is about 2½ yards. Organdy, crepe, crepe de chine, lingerie materials, silk and gingham are good for this design.

3661—A Simple, Attractive Day Dress.

Cut in sizes 16, 18 and 20 years. An 18-year size will require 4½ yards of 26-inch material. Taffeta, serge, linen, gingham, percale, pongee and shantung are desirable for this style. The width of the skirt at the foot is two yards.

3657—A Comfortable, Practical Play Suit.

Cut in four sizes: 2, 3, 4 and 5 years. The bloomers are joined to the waist and made with a drop back and side closing. Gingham, percale, pongee, repp, chambray, crash and crepe may be used for this model. The shoulder straps may be omitted, or the bloomers finished without the waist and worn in "overall" style. A 4-year size will require 1½ yards for the bloomers and 1¼ yards for the waist, of 27-inch material.

3675—A Popular Style for Boy's Shirt.

It is cut in 5 sizes: 6, 8, 10, 12 and 14 years. A 12-year size requires 3½

yards of 27-inch material. Madras, soisette, cambric, silk, flannel, percale and khaki could be used for this design.

3676—A Serviceable, Popular Style.

It is cut in 4 sizes: 2, 4, 6 and 8 years. A 4-year size requires 2½ yards of 27-inch material. Gingham with linen or organdy, chambray and percale combined; pongee, repp, poplin and crash are good for this model. The sleeves may be finished in elbow or wrist length.

3677—A Simple Dress Style.

May be had in 4 sizes: 6, 8, 10 and 12 years. A 10-year size requires 2½ yards of 26-inch material. For a slender girl this is an ideal design. Bordered or embroidered materials, crepe lawn, dimity, pongee and linen, also lawn and taffeta may be used. Smocking, Shirring or stitching will form a suitable decoration.

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Send the coupon for a 10-Day Tube. Note how clean the teeth feel after using. Mark the absence of the viscous film. See how teeth whiten as the film-coats disappear.

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The New-Day Dentifrice

A scientific film combatant, whose every application brings five desired effects. Approved by highest authorities, and now advised by leading dentists everywhere. All druggists supply the large tubes.

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This amazing invention beats coal, wood or city gas for heating, cooking and baking. No smoke. No dirt. No smoke. No work.

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Burns 5½ air and 6% propane, kerosene, Coal oil, gas or coke. Send for the full catalog. Send for descriptive Agents catalog money.

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## American Fruit Grower

### TEACHER TURNS TO FRUIT

By C. S. Spencer, Kentucky

Having by hard work and economy saved enough to buy a 40-acre hill farm in the knobs of Kentucky, the idea dawned on me that I needed a helpmate, and so I got married in 1913, and immediately made out an order for 20 fruit trees for a home orchard. I began teaching six months' rural school, and farming in season for a living.

I only had about five acres of land cleared and but one horse to farm with, and my teaching salary was \$35 a month. After receiving the trees and setting them about the fence line of the garden, I decided to enlarge my home orchard and therefore ordered an assortment of Rome Beauty, Ben Davis, Grimes Golden, Early Harvest, Jonathan and Stayman Winesap, 60 trees in all. This was in the fall of 1914.

About this time I subscribed for a fruit journal in Missouri in order to get a book on fruit culture as a premium and, after reading both, found my interest in fruit growing aroused to a high point. Also about this time a large western nursery sent me their catalogue, in which were related many instances of big money made at fruit growing, which worked my interest to a still higher point.

### The Interest Grew

Had I had the money to spare and enough land cleared to plant, then I would have ordered 500 apple trees to start a commercial orchard, but since there were these handicaps I had to content myself with an order for 300 Delicious, Stayman, and Rome Beauty, in the fall of 1915. As the land I had was gentle slope hill land and fresh cleared, I began to set the trees by the filler system, since I wanted many trees and was limited in space. I set them 15 feet by 30 feet and cultivated corn and other crops between them. Clover must always have a place.

Then came a consolidation of fruit journals into the AMERICAN FRUIT GROWER and I received the paper on the merits of my unexpired subscription for the Missouri paper. This new journal put the finishing touch on my interest in fruit growing as this new paper demonstrated with numerous concrete examples, that no crop was so sure of good returns and so increased the value of the land as the fruit crop, and I set about clearing land for more apple trees with a vim.

In this wise I have added a hundred or more at a time, till in 1919 I made my last setting of 200 York Imperial, which I purchased from a nursery in Tennessee. This brought my total up to about 750 apple trees with near 400 peach trees. I also have 20 or less each of pear, cherry, plum and mulberry, of various varieties for home use. Then by adding 200 grapevines, this represents my investment and interest in fruit culture.

I have planted trees when the ground was dry, ideal, and so wet mud would stick to your feet as you walked. I have found no difference in the effect on the growth of the trees. During a wet spring I searched a 900 page work on fruit culture for technical advice on setting trees when ground is wet, but found none. Then came the AMERICAN FRUIT GROWER giving the experience along this line of a man who set in wet soil without detrimental effects, therefore I went ahead and planted my trees.

If a long dry spell should follow setting, some danger would ensue no doubt. I have set trees in both fall and spring and find fall set trees make a better growth the following year. Roots must be pruned back to six or eight inches in length and top cut back one-half to two-thirds of last season's growth at planting time. I have found that trees may be safely pruned at any time when leaves are off just so they are not frozen. I prefer the low-headed tree and prune for that effect. Fruit may be easily gathered and low hanging limbs prevent sunscald and keep ground moist about the tree longer.

### Follow Dad's Example

I have one boy six years old, who will go plant every plum sprout or peach seedling he can find and has the science of the business pretty well formulated in his mind. Then there is a little white-headed girl of four who stands off at a safe distance with fingers twitching, an interested spectator. And last a 40-pound boy of 18 months, who stammers

"apple" at sight of any fruit from a potato to an artichoke.

My job and interest in life have increased 60 per cent since I have taken up fruit culture in connection with farming. Some 100 or more of my apple trees are coming into bearing, and when a few more hundred begin to fruit I will quit teaching and worrying.

## Classified Advertisements

### POSITIONS — HELP AND AGENTS WANTED

NEWEST THING OUT—LITHOGRAPH INITIALS FOR automobiles, motorcycles, canoes, golf sticks, tennis racquets, etc. Anyone can apply them in a fifty. Sell to everybody. Set costs 15¢; brings \$1.50. Fast sales and big daily profits for agents. Write for catalogue. Lithograph Company, Dept. 21, East Orange, N. J.

MAKE \$25 TO \$50 WEEK REPRESENTING CLOTHES Famous Philadelphia Hosiery, direct from mill—for men, women, children. Every pair guaranteed. Prices that win. Free book "How to Start" tells the story. George Cloth Company, Dept. 11, Philadelphia, Pa.

LIG MONEY AND FAST SALES. EVERY OWNER buys gold initials for his auto. You charge \$1.50, make \$1.35. Ten orders daily easy. Write for particulars and free samples. American Monogram Co., Dept. 92, East Orange, N. J.

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AGENTS!—EVER HEAR OF THE NEW WONDER fruit "Date Prune"? We are developing commercial orchards on a cooperative investment plan. Club organizers wanted. Experience is a good asset but not necessary. We teach you the way to make big money. Write or wire at once for literature and free sample of "Date Prune Fruit." OREGON NURSERY COMPANY, Oregon, Oregon.

YOUNG MARRIED MAN THOROUGHLY TRAINED in orcharding wants position with fruit association or as orchard manager. Excellent references. Address "Position," care of American Fruit Grower, Chicago.

AGENTS WANTED TO ADVERTISE OUR GOODS AND Distribute Free Samples to consumer. 90¢ per hour. Write for full particulars. American Products Co., 5072 American Bldg., Cincinnati, Ohio.

WANTED—WOMEN. BECOME DRESS DESIGNERS. \$35 week. Learn while earning. Sample lessons free. Franklin Institute, Dept. P 551, Rochester, N. Y.

SEVERAL HUNDRED MEN/WOMEN OVER 16, wanted immediately to prepare for U. S. Government positions. Railway Mail Clerks, City Mail Carriers; Clerks, Customs Clerks. \$110-\$195 month. Steady work, short hours. Long vacation with pay. Common education sufficient. Full list positions free. Write immediately. Franklin Institute, Dept. P 108, Rochester, N. Y.

GRADUATE HORTICULTURIST. TEN YEARS EXPERIENCE, desires to manage fruit farm. Best references. Horticulturist, care of American Fruit Grower, Chicago.

YOUNG MAN DESIRES WORKING MANAGEMENT of Va. or W. Va. orchard. Address Manager care of American Fruit Grower, Chicago.

AGENTS—\$100 WEEKLY. AUTOMOBILE OWNERS wild with enthusiasm. Marvelous invention doubles power, mileage, efficiency. Saves cost first day. Sensational sales everywhere. Territory going like wildfire. \$25 sample outfit and Ford Car free. Write quick. Over Co., Dept. 262, Louisville, Ky.

### ORCHARDS—F FARMS AND LANDS FOR SALE

MOUNTAIN APPLE RANCH NEAR THE YOSEMITE to lease. Only a married energetic expert need apply. H. W. Fairbank, 538 Palm Ave., Burbank, California.

WILL SELL 150 ACRE WESTERN APPLE ORCHARD, 50 per cent McIntosh just coming into bearing; protects half dor. carloads: A luscious fragrant apple which made the Bitter Root valley famous. Sells at highest price on N. Y. market. Nation's crop very short, expect big returns. Will sell orchards with or without crops. Also made 150 tons hay. Act quickly. E. L. Notting, Sec.-Treas., Stevensonville, Mont., until Sept. 20th; Elgin, Illinois, after that.

START FARMING ON GOOD HARDWOOD LAND IN Michigan, well located; 20, 40, 80 acre tracts \$15 to \$30 per acre. Small payment down, balance long time. We help you. Send for FREE booklet. SWIGART LAND CO., 2-1266, First Nat'l Bank Bldg., Chicago.

### MISCELLANEOUS

ATTENTION—FRUIT AND POTATO GROWERS AND shippers. For sizes, sorters, carriers, elevators, packing house supplies, write to Fruit Appliance Co., Inc., Yakima, Washington.

A DEFINITE APPLE BARREL SUPPLY—KNOCKED down standard size apple barrels! Write immediately for free booklet fully illustrating the Hollingshead Gold Standard Shock. J. D. Hollingshead Co., (Cooperage), LaSalle and Adams Sts., Chicago, Ill.

FRUIT AND APPLE PICKER. STOUT AND OLD people as well as children can pick fruit without ladders. Price \$1.50 postpaid. Send for circular. Master Co., Box 1, DesPlaines, Illinois.

PASTEURIZER—MOUNT GILEAD DRUM TYPE, continuous flow. Capacity 150 gallons per hour. Aluminum fittings, complete with thermometer. A practical preserver of fruit juices. Good as new at about half the cost. Frank Pyle, Ossawatomie, Kansas.

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### PLANTS, TREES AND SEEDS

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THE WONDERFUL BRODBECK CHERRY. TWICE the size of other. Trees for sale. Write for history. S. S. Brodbeck, Gallatin, Mo.

FRUIT TREES REDUCED PRICES DIRECT TO planters. No agents. Peaches, apples, pears, plums, cherries, grapes, nuta, pecans, mulberries, berries, Ornamental trees, vines and shrubs. Free 48 page catalog. Tennessee Nursery Co., Box 101, Cleveland, Tenn.

CUMBERLAND AND PLUM-FARMER RASPBERRIES. Well-rooted plants that are healthy. \$3 per 100, \$15 per 1000. Satisfaction guaranteed. Stocked Bros., White Hall, Ill.

### POULTRY

BABY CHICKS: ALL KINDS. 10¢ UP. CIRCULARS free. Booth Hatchery, Clinton, Mo.

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GET ACQUAINTED OFFER: MAIL US 20¢ WITH any size film or six exposures for development and six velvet prints. Twenty-four hour service. Fine work. Kodaks Photo Finishing Co., 320 Bell Ave., Roanoke, Va.

## WHAT CAN BE DONE WITH CITRUS CULLS?

In citrus producing sections, much effort is being expended in finding some way of bottling the juices of lemons, oranges, grapefruit and other citrus for soda fountain trade. But so far, this work has accomplished but little and a juice that is entirely satisfactory, even to the manufacturers, has not been made. The very fact that citrus juices have not yielded themselves to bottling may be one of the provisions of Nature to direct their use in some other manner.

In his address before the California citrus institute last winter, H. M. May of the Exchange By-Products Company, after describing various citrus products and by-products said:

"The simplest of all the possible citrus products is the juice itself, which can be pressed from the fruit, sterilized and bottled or barreled at comparatively small expense. It would be a glad day for the orchardist if this proposition is as simple as it sounds. The fellow who tackles the juice game sets out across 'no man's land' through shell holes and barbed wire entanglements galore.

"A graceful pint or half pint bottle with crown cap seems the only logical means for carrying the juice to the user. Note the complications. Glass expensive and fragile. By the time it is paid for, washed, filled, capped and packed, with the inevitable breakage figured in, you have invested in your container a sum fully equal to the intrinsic value of the juice which it contains. You must therefore look to the buyer of a pint of juice for a sum from two to three times what he would be asked to pay for the dozen of oranges it represents. This introduces a third problem—sales.

"Bottled grape juice sells readily since it is for ten months each year the only medium through which we can enjoy the grape. Citrus fruits, by contrast, are offered fresh at fair prices in every American market the whole year through. Who then, will purchase the millions of bottles of our juice that our citrus culls could provide? There are remote districts in which such a product would be welcomed, but the total which these sections could consume could be turned out in a single week by any sizable bottling plant."

But while no way has yet been found for bottling citrus juices and rendering them available to the general public, as is grape juice, loganberry juice and to a less extent, the juice of apples, increasing quantities of citrus fruits are going into lemonade and orangeade over soda fountains. Don Francisco of the California Fruit Growers' Exchange, in his address before the Citrus Institute told of their dealer service work in enlarging the sales of oranges and lemons and in referring to fruit juices said:

"We have been operating in Los Angeles for a year, a model lemonade and orangeade store of our own. We started this as a sort of experimental laboratory where we could learn all about the lemonade and orangeade business, what formulas were best, what equipment was necessary, the costs and the profits."

In so far as the citrus juice situation is concerned, it may be that the juice extraction in front of the customer, as described by Mr. Francisco, is the proper solution in so far as a juice drink is concerned. But it will not provide an outlet for the tonnage of cull fruits, and the cull fruit problem is a real problem for the citrus grower. The apple grower has no particular trouble in marketing his cull fruit, often at a profit sufficient to pay his picking and packing costs. The peach grower in most localities is able to dispose of culls at some kind of a price, and the same is true of the pear and grape grower. But who will find the way or ways of enabling citrus growers to get a profit from their culls?

# A Better Tire at a Lower Price



THE new Kelly Kant-Slip Cord is an achievement of what was thought impossible. It combines absolute insurance against skidding with almost unlimited mileage.

The tread is built up straight instead of following the contour of the tire, so that its entire width is always in contact with the road. As a consequence its skid-proof qualities last as long as the tire itself—and everyone knows the reputation that Kellys have for long life.

Even at higher prices than other tires the new Kelly Cord would be economical, but Kelly prices have been reduced. Now you can buy this wonderful new tire for the same price as other tires that have always sold for less.

## Kelly-Springfield Tire Co.

General Sales Department 1710 Broadway, New York

## ATTENTION SALESMEN!

The American Fruit Grower is now assigning territory to subscription representatives in Maine, New Hampshire, New York, New Jersey and Delaware. If you live in these states or contemplate going in this section soon, place your application at once and represent the only national fruit publication in America.

### Salary and Expenses Paid

E. H. MOSES, Eastern Circulation Mgr.  
318 Main St., Springfield, Mass.

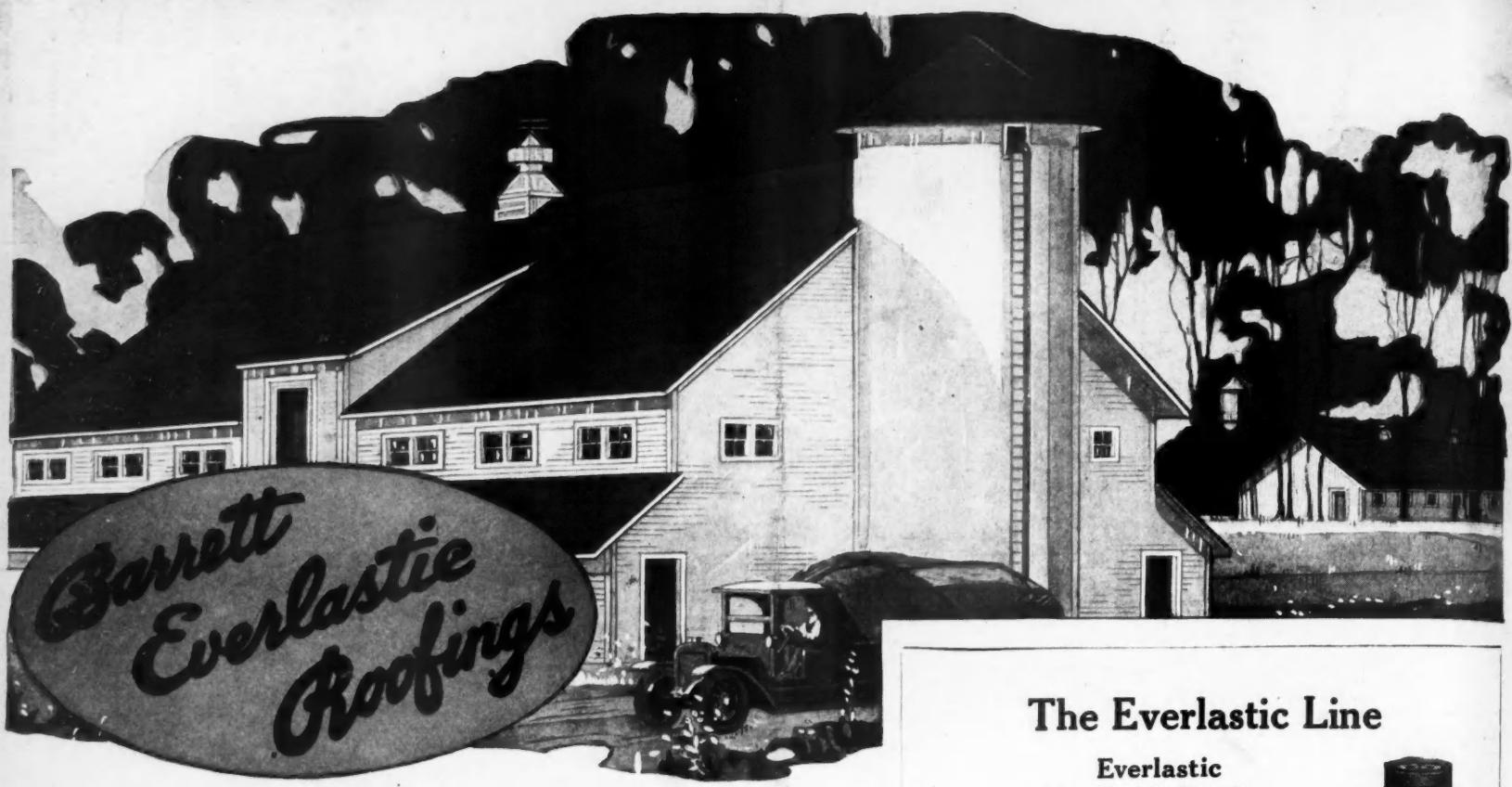
## LADIES— HAVE YOU A CAR?

If so, we will pay your *salary and expenses* to act as our **County Representative**, soliciting subscriptions in the rural districts for the American Fruit Grower. No limit to salaries paid producers, and you can easily make as much if not more than the man of the house. Write immediately, stating if you can devote whole or spare time and what fruit counties you can handle in California, Nevada, Utah, Colorado, Arizona, New Mexico and Texas.

## AMERICAN FRUIT GROWER

W. M. COLEMAN, Southwest District Mgr.

300 Curvier Building Los Angeles, Calif.



## Check up now on your Fall roofing—

**A**RE all your roofs good for another winter? Better check up *now* and find out, for if there's any re-roofing to be done it's time to get busy.

Whatever buildings you decide to roof—house, garage, barns, chicken house or sheds—you can save both time and money by using Barrett Everlastic Roofings. Some one of the four styles noted below will do the job right and do it economically.

Everlastic "Rubber" Roofing is the "old reliable" of plain-surfaced roll roofings. It has stood the test of time—and that's the only *real* test—on thousands of farm and factory buildings all over the country.

The three other styles of Everlastic Roofings are surfaced with genuine crushed slate, in permanent natural shades of red or green. They include a roll roofing and two forms of shingles. Everlastic Shingles are handsome enough for the finest residences, yet they're soundly economical for *any* building that requires a shingle roof.

When you buy prepared roofing, always look for the Everlastic trademark. It is a sure guide to honest value and long service. *Booklets free.*

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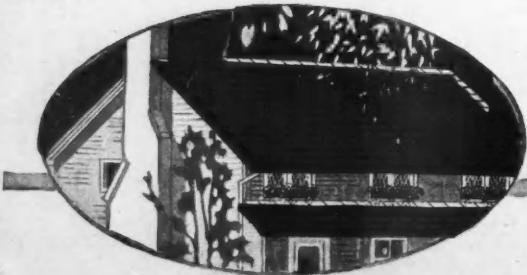
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#### Everlastic "Rubber" Roofing

A recognized standard among "rubber" roofings. Famous for durability. Made of high-grade waterproofing materials, it defies wind and weather and insures dry, comfortable buildings under all weather conditions. Nails and cement with each roll.



#### Everlastic Slate-Surfaced Roofing

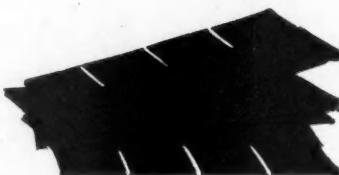
A high-grade roll roofing, *surfaced with genuine crushed slate*, in two natural shades, red or green. Needs no painting. Handsome enough for a home, economical enough for a barn or garage. Combines real protection against fire with beauty. Nails and cement with each roll.



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(Four-Shingles-in-One)

Made of high-grade thoroughly waterproofed felt and *surfaced with crushed slate* in beautiful natural slate colors, either red or green. Laid in strips of *four shingles in one* at



far less cost in labor and time than for wooden shingles. Give you a roof of artistic beauty worthy of the finest buildings, and one that resists fire and weather. Need no painting.

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Made of the same durable slate-surfaced (red or green) material as the Multi-Shingles, but cut into individual shingles, 8x12 $\frac{3}{4}$  inches. Laid like wooden shingles but cost less per year of service. Need no painting.

